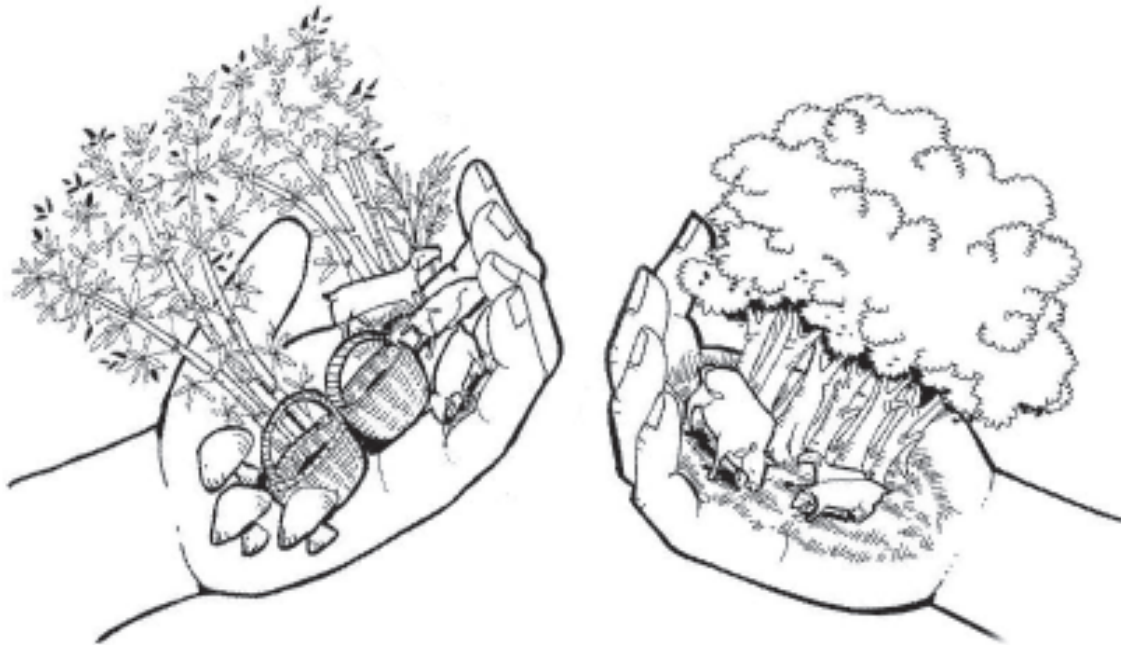


# Using Forest Resources Sustainably: *Local Solutions from Lao PDR*



**T**he majority (80 per cent) of the Lao population living in the countryside relies mainly on non-timber forest products (NTFPs) for subsistence, and secondarily, for cash income. In times of rice shortage, rural families frequently go into debt to borrow rice — with such debts often forcing them to harvest and sell forest products in a destructive manner. Rice banks can reduce pressure on forest resources by reducing chronic debt relations.

Apart from pure subsistence, NTFPs are also found to provide, on average, 55 per cent of a family's cash income in villages near forests. They also serve as a low-cost survival system, securing food, shelter and medicinal needs, and as a security system in times of food shortage or other emergencies. This suggests that every program directed at rural development and biodiversity conservation in Lao PDR should have an NTFP strategy.

In the last 50 years, however, the forests of Lao PDR have rapidly declined due to population growth and logging pressures. Forest cover has been reduced from 70 per cent of the total

## Source

Joost Foppes and Sounthone Ketphanh. "Forest Extraction or Cultivation? Local Solutions from Lao PDR". Paper presented at the workshop on the evolution and sustainability of "intermediate systems" of forest management, FOREASIA, 28 June-1 July 2000, Lofoten, Norway.

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land area in the 1940s to 41 per cent in 1999. At the same time, only a few examples of intermediate forest management systems are being implemented. Hence, as more people competed for limited forest resources, conflicts arose between village communities.

To address the problem, the local people have begun to develop new systems of managed NTFP extraction, or “forest cultivation” systems. Although these systems are still the exception to the predominant practice of “free access” forest extraction, they offer promising potential for intermediate forest management in Lao PDR and other countries.

In an attempt to study these modified forest use systems, an NTFP project was begun in 1995 by the World Conservation Union (IUCN) and the Forest Research Center of the Lao Ministry of Agriculture and Forestry, with funding from the Royal Netherlands Government.

The study showed that whereas free extraction is the main mode of forest use in Lao PDR, local communities have developed some interesting “intermediate” forest management systems.

Initially, however, the study noted a breakdown of the following traditional forest management systems:

### ⇒ ***Shifting Cultivation***

Shifting cultivation or “slash and burn” agriculture has been practiced for thousands of years in the hills of Lao PDR. In recent years, however, there has been a trend towards shorter fallow periods due to the greater demand for land and resources resulting from population growth. The reduced fallow periods have led to an overgrowth of weeds, poorer soils, lower rice yields, increased erosion, and a decline in NTFPs obtained from the forest fallow. No longer earning enough from the forest, the people have migrated to cities to become laborers. Opium production and addiction have also become a serious problem. The government has tried to end shifting cultivation by resettling villagers in valleys, introducing land allocation programs, and promoting permanent agriculture — but so far with mixed results.



## ➤ **Private Ownership of Trees**

While most of the forests of Lao PDR are considered “free access” zones, certain trees are traditionally regarded as privately owned. One example are the oleo-resin (“yang oil”) producing trees (*Dipterocarpus alatus*) that are owned and harvested by individual families. In the last decade, Lao PDR experienced an unprecedented growth — followed by a rapid decline — in its exports of yang oil, corresponding to the rapid logging and consequent depletion of its yang oil trees. These developments have resulted in the severe degradation of the Lao PDR forests, as well as a serious loss in income for the local people who make a living from selling yang oil.

## ➤ **Spirit Forests and Hunting Taboos**

Almost every Lao village has a holy or spirit forest, which is used as burial grounds or set aside as a refuge for spirits. However, the areas allotted to spirit forests have been decreasing due to demand for more land and the influx of outsiders into the villages — a widespread phenomenon in Lao PDR, where as much as two thirds of the population was displaced in one way or another towards the end of the war in 1975. Hence, the maintenance of spirit forests holds limited prospects for biodiversity conservation.

Another tradition consists of taboos practiced in individual village communities against the hunting and eating of certain types of animals. Interesting as these taboos are, most villages have stopped adhering to them or now have neighbors who do not conform to them — a result of the upheaval during the war in the 1960s to 1970s. Thus, prospects for conservation through the observance of such taboos appear also to be limited.

## **Intermediate Forest Use Systems**

The earlier-mentioned study showed that while free extraction is still the main mode of forest use in Lao PDR, local communities have developed some “intermediate forest management systems”. These seem to be driven by five key forces:

- Rapid population growth and massive population movements during and after the war of 1964-1975, leading to the disruption of traditional social structures;
- Growing market for forest products as a result of changing Government policies on economics and trade and improved transportation systems;
- Growing insecurity of land tenure and access rights, despite Government policies to regulate these matters;
- A very active and enterprising attitude of local innovators who continue to invent and test new intermediate forest use systems; and
- A growing network of support organizations/projects that assist local innovators to learn from each other and to continue testing new intermediate forest use systems.

The intermediate forest management systems discussed earlier each play a key role in different aspects of economic and social life in Lao PDR, as follows.

## **1. Single-Village Agreement on Forest Use Rules**

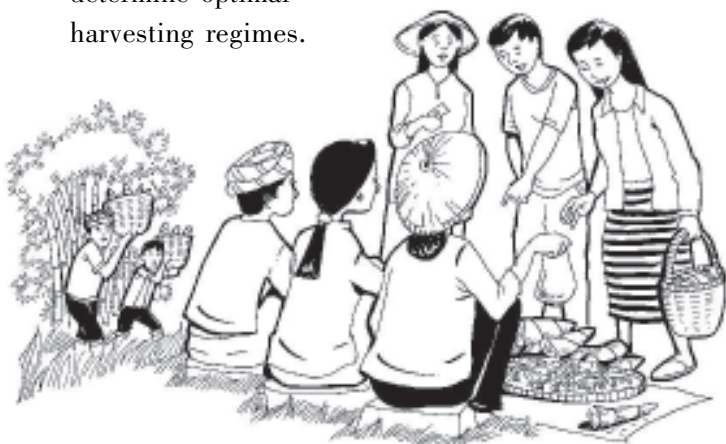
Village communities are starting to make agreements on forest use rules. Two examples are: NTFP harvesting in Southern Laos and the selling of bamboo shoots in Oudomxay.

### **STRENGTHENING LOCAL GROUPS**

Villagers of Nam Pheng, Oudomxay used to be very poor, and could not produce enough rice to feed the community all-year-round. The off-season bamboo shoots they gathered for sale during the dry season did not generate enough income. With the assistance of the IUCN/NTFP Project, the villagers were able to analyze the problem.

In a series of meetings, the community gradually realized that they could improve their sales of bamboo shoots if they would team up and sell at a fixed price, at a designated place, not measured per bundle but measured per group. The community discussed this idea until every family had agreed to join the village selling group. The results exceeded all expectations.

As a result, the community became very interested in monitoring and managing its bamboo forests. Together with District forestry officers, they are now making inventories of their bamboo forests and are testing various cutting methods to determine optimal harvesting regimes.



The experience of a village in Oudomxay offers a lesson in how to sequence group-development activities. It may be better to start with an income-raising activity (*e.g.*, an NTFP selling group) or an activity that improves community well-being (*e.g.*, rice banks) before venturing into forest management or sustainable harvesting agreements.

## **2. NTFP Harvesting Rules**

The village of Ban Nong Hin, Champasak has developed management systems that range from rotational harvesting of rattans to prohibited fishing seasons or total hunting bans for certain species of wildlife. These rules resulted from their own estimate of declines in off-takes of NTFPs from 1989-1999. Exposure to examples of management practices from other areas in Lao PDR and from other countries assisted the community in developing its own set of rules.

The NTFP Project organized a meeting with all stakeholders identified by the villagers as other user groups competing for the same forest resources:

- High-ranking provincial government officials;
- District officers;
- Soldiers of the District army camp;
- Soldiers of the army camp in the next village; and
- Four surrounding villages.

Participants discussed the declines in forest products, reasons for destructive harvesting, alternative sustainable management systems, new rules and sanctions, the roles of all forest users, etc. At the end of the workshop, all participants agreed to adopt the proposed rules, giving village communities the right to use agreed sanctions against trespassers. This model is now being replicated in surrounding villages.

### **3. Multi-Village Arrangements on Forest Use Rules**

As the village community is the traditional unit of organization in Laos, there are very few structures for inter-village conflict resolution. Therefore, the NTFP Project used workshops to create common understanding on the need for conservation and sustainable forest use among neighboring villages.

### **4. Domestication of NTFPs**

“Forest cultivation,” or “agroforestry,” consists of forested landscapes influenced by forest users. Examples of NTFP domestication being practiced in Southern Laos include the cultivation of cardamom, *sisiet* bark, broom grass, bamboo, and edible rattan shoots.

### **5. Local Social Strategies**

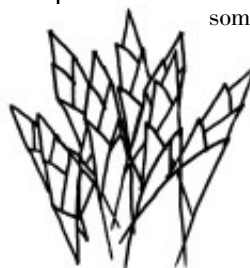
Intermediate systems provide a biologically diverse range of food, as well as subsistence needs, to the majority of the rural population. Thus, they provide an excellent risk insurance system against slack periods or times of crisis. Fish conservation and NTFP domestication seem to fit very well as local social and survival strategies and may provide a solid basis for rural life-styles in the new century.

### **6. Landscape Level Effects**

Intermediate systems have minor effects on the landscape compared to logging, shifting cultivation, and conversion to agricultural land. Forest cultivation (*e.g.*, agro-forests) could

#### **EDIBLE RATTAN SHOOTS**

Edible shoots of rattan are considered a delicacy in Laos. They fetch a good price (US\$0.20-US\$0.30/kg) at local urban markets. As forests began to disappear, rattan shoots became more difficult to find. Local innovators saw the potential for cultivating rattan to produce the edible shoots and started planting in 1994. They learned nursery methods from nearby Northeast Thailand, where rattan cultivation had started earlier. At least three families have begun to make a good income from selling rattan seedlings, and some 20 families have started selling shoots from their rattan gardens. Yields vary between 1,000 and 2,000 kilograms per hectare.



## COMMUNITY FOREST USE RULES

Village communities that had been forced out of the Xe Bang Nouan Protected Area in Salavan, Southern Laos by various governments over the last 60 years were struggling to survive on the very fragile, exhausted sandy soils around the Protected Area. They continued to use the forests inside the Protected Area intensively for fishing, collection of NTFPs and firewood, grazing of livestock, and illegal hunting and logging. Inevitably, the resulting competition for limited forest resources created conflicts among the villages.

The NTFP Project brought representatives of up to 20 neighboring villages together for a series of workshops. These workshops led to basic agreements on forest use rules that will be worked out in more detail in follow-up workshops. All participants, including district government representatives, are eager to continue the process.



provide forested landscapes over large parts of what are now agricultural or fallow lands. Cultivation of NTFPs and sustainable management of aquatic resources may reduce pressure on remaining forest resources, leaving more forests intact.

## 7. Biodiversity Conservation

The harvesting of NTFPs (including wildlife) can affect biodiversity in two ways: the harvested species itself can be affected by harvesting or planting, or other species can be

### BAMBOO PRODUCTS

The village of Ban Lak 25 specializes in the production of bamboo products, with the villagers displaying a wealth of local knowledge on bamboo. Seven species of bamboo are used by the Ban Lak 25 villagers:

WILD SPECIES	USES
'Mai sod'	Walls of bamboo houses, floor mats, handicrafts (e.g., basketry, fish traps, food containers)
'Mai hia'	
'Mai lai'	Basketry
'Mai ko'	Construction
CULTIVATED SPECIES	USES
'Mai sang pai'	Edible bamboo shoots for sale
'Pai pungwan'	Construction
'Mai phai ban'	Construction, handicrafts

There is a gradual transition from wild bamboo stands to privately owned bamboo gardens. Bamboo is grown mainly to produce edible bamboo shoots that can be sold, rather than bamboo poles.

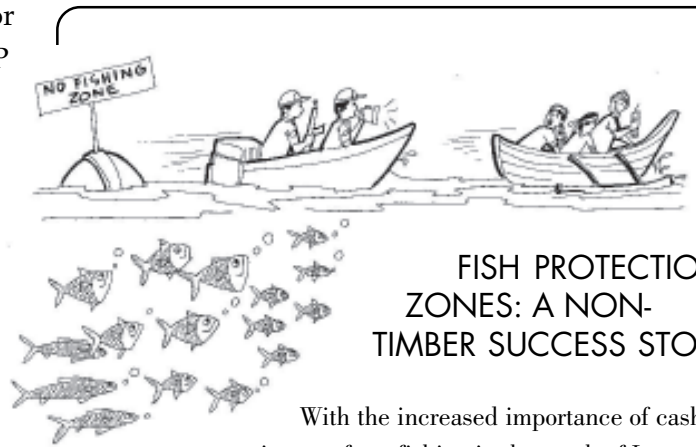
affected as a result of the harvesting or planting. The depletive effect of NTFP extraction on the survival of forest species depends largely on *which part* of the organism is harvested *and at which stage* in its life cycle. Further, the domestication of NTFPs can affect not only the availability of other plant species but also of animal species feeding on such plants. However, if agro-forests are to be compared to their agricultural alternatives, the biologically more complex agro-forests are a far better environmental alternative.

## 8. Community Fish Protection Zones

Fish conservation zones have emerged as a very popular concept. Fish are considered by most rural Lao people as a forest product, since much fish is caught in forest streams and wetlands close to forests. Because fish is such a vital food resource for the Lao people, there is considerable interest in sustainable fish management. Firstly, its results are quickly visible and easy to monitor. Secondly, fish conservation provides an excellent entry point for integrated development and conservation programs.

## Models That Have Worked

Intermediate systems, especially NTFP-based ones, are a very promising solution to the problems of forest management. But while local people can develop such locally adapted solutions, they cannot enforce these without support from outside facilitators. A network of services needs to be available to provide information exchange, technical support, social services, credit assistance, and other services. Recommendations taken from models that worked well in the IUCN-NTFP Project are:



### FISH PROTECTION ZONES: A NON-TIMBER SUCCESS STORY

With the increased importance of cash income from fishing in the south of Laos, the Lao Community Fisheries and Dolphin Protection Project developed a program of village level meetings in the Siphandone area, enabling communities to become aware of problems and to make decisions on management regulations. The meetings are held in harmony with local customs, and involve all existing local organizations. Decisions are documented and validated by local authorities. As a result, over 60 village communities in one district in Southern Laos have set up successful co-management systems for fish and frog conservation since 1993.

Taking into account the complex system of seasonal water flows and fish migration patterns of the Mekong, typical management options chosen by local communities were:

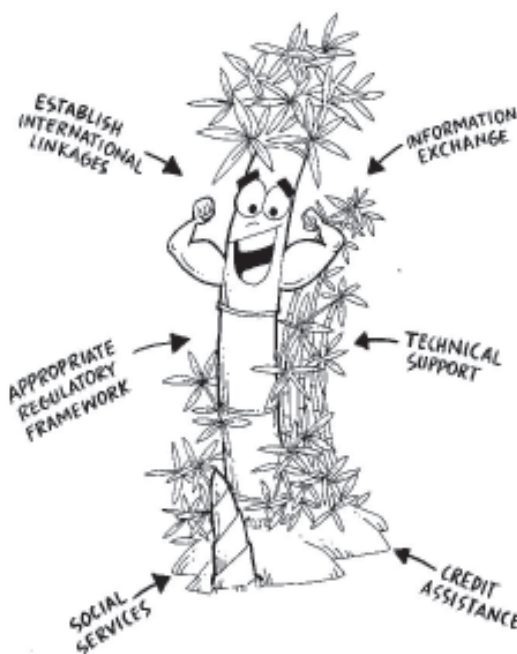
- No-fishing zones in well-defined strips of the mainstream Mekong river. These deep-water areas act as a refuge for fish during the period of peak fishing pressure in the dry season;
- Bans on stream blocking. This measure allows fish to move into spawning areas such as wetlands and paddy fields at the beginning of the wet season;
- Bans on various methods that are seen as unfair (*e.g.*, water banging, fishing with spears and lights, use of explosives, chemicals and electricity);
- Juvenile fish conservation (*e.g.*, ban on scoop-netting of juvenile snakehead fish, *Channa striata*);
- Regulations on fishing in paddy fields and communal ponds (revive community traditions); and
- Frog conservation schemes (*e.g.*, limited hunting during spawning season, no catching of tadpoles).

- Work closely with selected appropriate local institutions at all levels;
- Organize and train province/district level field teams, who will facilitate participatory processes at the village/community level;
- Use participatory techniques (PRA) to facilitate the creation of user groups and identify options for action;
- Identify and support “entry point” activities, *e.g.*, rice banks, planting trials, marketing groups, land allocation processes;
- Apply participatory monitoring methods;
- Share results through workshops at village, district, province, national, and regional levels;
- Improve local networking through stakeholder workshops focusing on specific topics;
- Arrange village-to-village exchange visits and study tours for effective sharing of local information;
- Provide examples from other countries to local user groups through international networks and by means of workshops, study tours, e-mail exchange, literature and magazines; and
- Use examples from successful villages for study tours by outsiders from other villages, provinces, and other countries.

## Options for Government and Aid Organizations

Some options for government and aid organizations deciding how to support the development of intermediate NTFP production systems are:

- Add an NTFP strategy to all rural development and biodiversity conservation projects/ programs in the country;
- Set up NTFP development support units at the province and district level;
- Specify NTFP programs for forest dwelling ethnic minorities to emancipate themselves socially, reduce poverty, preserve their cultural heritage, and protect their environment;
- Support national research and training programs to backstop locally adapted NTFP programs;
- Establish a national program for forest products marketing/trade support;
- Set up permanent institutions for ethnobotanic data collection and storage;
- Create a regulatory framework to strengthen community rights and stimulate fair trade;
- Support the establishment of international linkages to encourage the regional exchange of technical information on NTFPs.





Lao PDR has a remarkable opportunity to build a strong NTFP sub-sector as a basis for sustainable economic development in the Southeast Asia region. By strengthening its rural communities, it also has the best chances to preserve its rich biodiversity and cultural heritage. Intermediate forest systems are likely to turn out to be the only realistic alternative for Lao PDR, given the country's unique combination of relatively low population densities and large forested areas.

This Resource Book is produced by the Asian NGO Coalition for Agrarian Reform and Rural Development (ANGOC) [angoc@angoc.ngo.ph](mailto:angoc@angoc.ngo.ph) and the International Land Coalition (ILC) [coalition@ifad.org](mailto:coalition@ifad.org).

# Tenure Arrangements for Non-Timber Forest Products in Southern Laos



The experience of forest dependent communities in Pathoumphone District of Champasak Province in Southern Laos offers proof that forest dependent communities have developed multiple and complex tenure arrangements for managing and protecting various non-timber forest products (NTFPs), and that it is essential to carefully consider these tenure arrangements in the context of outside management initiatives.

## Communal Land, Private Trees

Most forest resources, whether trees or non-timber forest products, are traditionally considered common property resources by the villagers of Pathoumphone District. However, tenurial rights over these resources may vary in a number of ways. For instance, privately owned trees can be found on commonly owned land, while some malva nut trees, for example, that are found on private land may be commonly owned.

### Source


Ian C. Baird and Somphong Bounphasy. "Non-Timber Forest Product Use, Management and Tenure in Pathoumphone District, Champasak Province, Southern Laos". Remote Village Education Support Project — Global Association for People and the Environment, January 2003.

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Meanwhile, individual rights to trees (in relation to the collection of NTFPs) are determined by the nature of the products being harvested from them.

In the case of wild honey, for instance, honeybee tenure rights, or ownership rights to trees where the honey bees nest, are based on the type of bees nesting in particular trees, as shown on *Table 1* below.

**Table 1.** HONEYBEE TENURE RIGHTS



Type of Honey Bees	Characteristic	Tree Tenure
1) Pheung Phoum	Nests on all tree types; produces from 5-30 liters of honey per nest	Temporary private ownership of tree (reverts to community after 1 harvest of honey)
2) Pheung Ton	Nests only on one <i>deua han</i> tree; produces from 5-10 liters of honey per nest	Permanent private ownership of <i>deua han</i> trees; rights to tree may be passed on to heirs
3) Pheung Kon	Nests on hollowed insides of trees; produces only 1 liter of honey per nest	Private ownership of trees passed on to heirs



Wild fruit trees are by tradition considered common property. However, fruit trees that had been planted by an individual or group of individuals, whether on private or public land, are considered private property. The cutting down of wild fruit trees and/or their branches is prohibited.

Vines and other plants that are dependent on primary growth trees are considered common property. Villagers have the right to harvest and sell these products. Outsiders, meanwhile, have to pay fees to the village in order to partake of them.

### THE MALVA NUT TREE

The malva nut tree is among the tallest trees in the semi-evergreen forest of the Pathoumphone District of Southern Laos. Although it had always been abundant, the villagers found little use for its fruit, except as an ingredient in a basic Lao dish. Between 1980-1990 however, the demand for the malva nut rose dramatically, owing to the discovery of its medicinal use by ethnic Chinese. This prompted the villagers to come up with creative and sustainable methods of harvesting, trading, taxation, marketing and management of the malva nut trees and its subsequent economy. Malva nut tree plantations have also been established by communities to supply the growing demand for the malva nut.

## NON-TIMBER FOREST PRODUCTS IN CHAMPASAK PROVINCE

Regardless of ethnicity, the people of Pathoumphone are heavily dependent on forest products for their livelihood. Indicating the importance of NTFPs in Champasak Province, Foppes (1996) reported the collection of 300 different products. He roughly classified these into five main groups:

- (1) *food products* [bamboo shoots, fish, bush meat, wild vegetables and fruits, wild tubers, insects and molluscs];
- (2) *construction materials* [bamboo, rattan and other fibers];
- (3) *gums and resins* [wood resin, dry resin, “bong” bark and sticklac];
- (4) *medicinal plants* [malva nuts, cardamom, fern roots, neam bark and vomica nuts]; and,
- (5) *ornamental plants* [orchids, ferns and curcuma flowers].

## Factors influencing NTFP and Forest Resource Management

### 1. Markets for NTFPs

A ready market for a variety of NTFPs assures people in forest-dependent communities of a reliable source of income and livelihood. Since these communities are generally located in the uplands and thus have limited access to road networks, their agricultural activities have remained largely at the subsistence level. They are therefore highly dependent on products such as wild honey, vines, leaves, herbs and medicinal elements, and fruits to augment their incomes and livelihood options.

### 2. Strong Village Communities

The presence of strong village communities, particularly indigenous communities, with their traditional and sound knowledge of forest and NTFP management, helps a lot in maintaining ecological balance and forest sustainability. Villagers act as forest guardians trying to strike a balance between livelihood and income options and resource sustainability.

### 3. Cultivation

Some forest resources like the cardamom and the malva nut tree are now being cultivated by

### WOOD RESIN TREES

Wood resin trees are large perennial trees that are well-known in Southeast Asia for their wood oil, which is used in a wide range of products, including torches, epoxies, varnishes and paints, and perfumes. Naturally grown trees are initially considered common property but once a person invests labor in cutting a hole in the tree to facilitate the extraction of wood resin, the tree becomes the exclusive private property of that person. Rights to these trees then become inheritable.

When it comes to the right to cut down wood resin trees for timber, practices vary among villages. In some communities, only tree-tapping rights are considered exclusive, while the sale of timber should benefit the entire community. In other

villages, ownership of the trees includes the right to tap and cut the trees. However, the community taxes individuals who profit from their wood resin timber.



## INSIGHTS AND LESSONS

Some useful insights and lessons can be drawn from the experience of Southern Laos. Some of these can be summarized as follows:

- Different plant-based NTFP resources are managed under different tenure and management arrangements. As has been shown, the same resource can be managed under different tenure arrangements, depending on the circumstances.
- Tenure arrangements can be permanent or temporary, and they can certainly change according to circumstances. They are often multilayered.
- Different communities, even in the same district and within the same ethnic group, can have quite different resource tenure arrangements. Many of these arrangements are not mandated by government decrees nor are even written down.
- Management regimes are generally much more complicated than are generally perceived.
- It is important for forestry planners to consider the multiple and varied forest use patterns and tenure arrangements that exist for the different forest resources, including NTFPs.



- Local people use and manage forest resources in particular ways, based on their local ecological knowledge.
- Multiple resource tenure analysis (*i.e.*, the recognition of different kinds of resource rights and its creative application in tenurial management) needs to be carefully considered and integrated into the planning process, especially when developing plans for logging of any kind, including so-called “sustainable logging”.

villagers in selected areas in the Pathoumphone district. Forest tree and NTFP varieties that thrive well under cultivation provide a new source of livelihood and protect against the indiscriminate harvesting of wild growth forest resources.

Some agroforestry systems such as the one for *phou* leaf production, and the system for managing wild cardamom, encourage the retention of forests either as old-growth trees for the *phou* leaves to climb up on, or as a natural secondary forest suitable for cardamom production. It is unfortunate though, for both protected area management and for local people, that these two systems are now in serious decline due to market factors.

## Moving Towards Efficient NTFP and Forest Resource Management

### *Mapping of Forest Resources*

A study of existing forest resources provides a useful tool for sustainable forest resource management systems. Identifying various forest resources will help upland/forest communities to develop appropriate resource management technologies/systems.

### *Market Research and Product Development*

Research regarding market possibilities and the development of NTFPs should be undertaken in the context of carefully considering local resource tenure arrangements, in order to assist communities in strengthening management systems and finding suitable markets for their NTFPs.

## ***Government Regulations***

Government mandated regulations sometimes end up damaging the systems that local people are already implementing, thus leading to resource destruction and decline. For instance, the ban on the commercial trade in and export of wood resin from Laos that was enforced in 1996 caused drastic declines in prices and markets for this product. The government should recognize that tree-based NTFPs are critical to the livelihoods of the villages concerned, and that understanding local tenure arrangements for different NTFPs is essential for determining appropriate management strategies.

This Resource Book is produced by the Asian NGO Coalition for Agrarian Reform and Rural Development (ANGOC) [angoc@angoc.ngo.ph](mailto:angoc@angoc.ngo.ph) and the International Land Coalition (ILC) [coalition@ifad.org](mailto:coalition@ifad.org).

# Sharing a Common Pot: *Community Management of Forest Food Resources in Lao PDR*



**F**orest food resources occupy a central place in the food system of the Lao people. Rural communities traditionally obtain food from natural forests, fallow swidden, agro-forests, rice fields, and associated aquatic environments. Seasonally available fish, frogs, bamboo shoots, plants, tree leaves, insects, wild meat and mushrooms are essential components of the daily diet of forest dwellers and upland shifting cultivators. Because they provide food year-round and can also be sold and exchanged to obtain rice during times of drought, flood-induced crop failure and economic hardship, forest foods make a vital contribution to the otherwise nutritionally poor and bland diets of rural households. At the same time, the cultural significance of traditional foods for daily meals in the home, on ceremonial occasions and as sought-after delicacies in restaurants, has generated a strong market among the growing urban population and lowland farmers who no longer have access to productive forests. Thus directly through consumption, and

## Source

Kate Clendon, "The Role of Forest Food Resources in Village Livelihood Systems: A Study of Three Villages in Salavan Province, Lao PDR," IUCN, August 2001.

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indirectly through sale and barter, forest food resources make a significant contribution to household food security, both locally and at the national level.

However, at current levels of harvesting, these food resources are at risk of being depleted. Already, villagers are finding it harder than ever to meet their daily food needs from forest food resources. As a result, the latter now make up an increasingly smaller proportion of the diet than in the past. The decline in forest resources has also had direct negative impacts on the livelihood of these forest-dependent people.

Clearly, the traditional system of open access sharing is no longer able to cope with competitive harvesting by growing numbers of people.

A field study (*see box article*) conducted in 1998 in three communities in southern Lao PDR yielded quantitative proof of the critical value of forest foods in augmenting the people's diet, and thus ensuring food security throughout the community, particularly among the poorest households. Participatory research was conducted in three subsistence communities located on the edge of the Xe Bang Nouan National Biodiversity Conservation Area (NBCA) in the south of the Lao People's Democratic Republic (Lao PDR). These communities are Ban Khamteuy, Ban Konglunoi and Ban Nongthe.

The field study was undertaken as part of the Non-Timber Forest Products (NTFP) Project, which was started in Lao PDR in 1995 as an integrated development and conservation project, administered by IUCN — The World Conservation Union and the Department of Forestry of Lao PDR. The project aims to promote the well-being of local communities within the context of biodiversity conservation, through the sustainable development of non-timber forest resources.

As recently-settled lowland agriculturalists, these predominantly Lao Theung/Katang communities are historically and culturally dependent on the forest. Their self-sufficiency in food was based on fishing, hunting and gathering, and swidden cultivation. Moreover, the study drew out community perceptions of food resource management and thus pointed to opportunities for community-based management approaches that integrate conservation and development.

## **The Contribution of Forest Food to Community Well-Being**

### ***Food for all seasons***

Forest food resources make a significant contribution to the food system of the study households throughout the year, both directly for consumption, and indirectly through sale and exchange for rice and essential cooking ingredients. As seen in *Figure 1*, frogs, fish, small animals and greens are gathered continuously, while the collection of other species with shorter periods of availability is distributed across the seasons. Forest foods thus provide a regular flow of nutrients to household diets.



**Figure 1. KHAMTEUY ANNUAL CALENDAR FOR FOREST FOOD RESOURCES**

No.	Food Resources	MONTHS												Collected by			
		1	2	3	4	5	6	7	8	9	10	11	12	M	W	B	G
1	Frogs (Kop)						■							✓	✓	✓	✓
2	Frogs (Khiat)	■	■	■	■	■	■	■	■	■	■	■	■	✓	✓	✓	✓
3	Crabs	■	■	■	■	■	■	■	■	■	■	■	■	✓	✓	✓	✓
4	Shrimps							■	■	■	■	■	■	✓	✓	✓	✓
5	Snails							■	■	■	■	■	■	✓	✓	✓	✓
6	Eels							■	■	■	■	■	■	✓		✓	
7	Snakes	■	■	■	■	■	■	■	■	■	■	■	■	✓		✓	
8	Fish						■	■	■	■	■	■	■	✓	✓	✓	✓
9	Fish (fa)			■	■	■	■	■	■	■	■	■	■	✓		✓	
10	Turtle						■	■	■	■	■	■	■	✓		✓	
11	Len						■	■	■	■	■	■	■	✓		✓	
12	Kathang						■	■	■	■	■	■	■	✓		✓	
13	Lizard						■	■	■	■	■	■	■	✓		✓	
14	Nyeh	■	■	■	■	■	■	■	■	■	■	■	■	✓	✓		
15	Rats	■	■	■	■	■	■	■	■	■	■	■	■	✓		✓	
16	Squirrels	■	■	■	■	■	■	■	■	■	■	■	■	✓		✓	
17	Bamboo shoots							■	■	■	■	■	■	✓	✓		
18	Dohrk gachaw					■	■	■	■	■	■	■	■	✓	✓		
19	Pak wan			■	■	■	■	■	■	■	■	■	■	✓	✓		
20	Mushrooms						■	■	■	■	■	■	■		✓		✓
21	Chilo											■	■		✓		✓
22	Pak naam			■	■	■	■	■	■	■	■	■	■	✓	✓	✓	✓
23	Pak kadon			■	■	■	■	■	■	■	■	■	■	✓	✓	✓	✓
24	Pak tiew			■	■	■	■	■	■	■	■	■	■	✓	✓	✓	✓
25	Honey/Larvae					■	■	■	■	■	■	■	■	✓		✓	
26	Toads					■	■	■	■	■	■	■	■	✓	✓	✓	✓
27	Big toads			■	■	■	■	■	■	■	■	■	■	✓	✓	✓	
28	Pak samek											■	■	✓	✓	✓	✓
29	Pak eleh	■	■	■	■	■	■	■	■	■	■	■	■	✓	✓	✓	✓
30	Bon	■	■	■	■	■	■	■	■	■	■	■	■		✓		✓
31	Red ant eggs			■	■	■	■	■	■	■	■	■	■		✓		✓
32	Chachan			■	■	■	■	■	■	■	■	■	■	✓		✓	
33	Mango					■	■	■	■	■	■	■	■	✓	✓	✓	✓
34	Mak chong					■	■	■	■	■	■	■	■	✓	✓		
35	Tow								■	■	■	■	■	✓	✓		
36	Low	■	■	■	■	■	■	■	■	■	■	■	■	✓	✓		

M = Men; W = Women; B = Boys; G = Girls

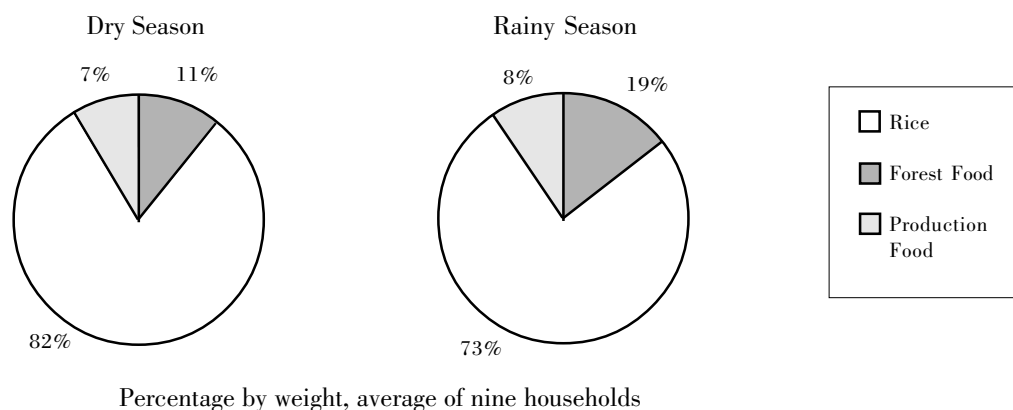
## Rich inputs for poor diets

The food system is based on the staple glutinous rice. As such, this dominates the diet, at an average proportion by weight of approximately 82 per cent and 73 per cent of total consumption during the dry and rainy seasons, respectively (Figure 2). Second to rice, forest foods are an essential component of the diet, accounting on average for 11 per cent and 19 per cent of total household consumption in the dry and rainy seasons.



Therefore, apart from rice, forest foods amounted to 61 per cent and 70 per cent of total consumption. As forest foods provide year round diversity to otherwise nutritionally poor, poorly balanced, and bland diets, they ensure a regular source of key nutrients.

**Figure 2.** HOUSEHOLD FOOD CONSUMPTION



## What are forest foods worth?

The Kip values recorded in Table 1 are a summation of the daily household estimates for all foods consumed, including food eaten in the fields during rice cultivation. As far as possible, valuation was based on the actual selling/buying/exchange values in the village.

Forest foods represent a significant proportion of total food value, with a household average of 11 per cent to 19 per cent in the dry and rainy seasons respectively. Household variation ranges from four per cent to 48 per cent, with the poorest households recording the highest percentages of total food value derived from forest foods.

**Table 1. DAILY HOUSEHOLD FOOD CONSUMPTION VALUE**

VILLAGE/  
HOUSEHOLD

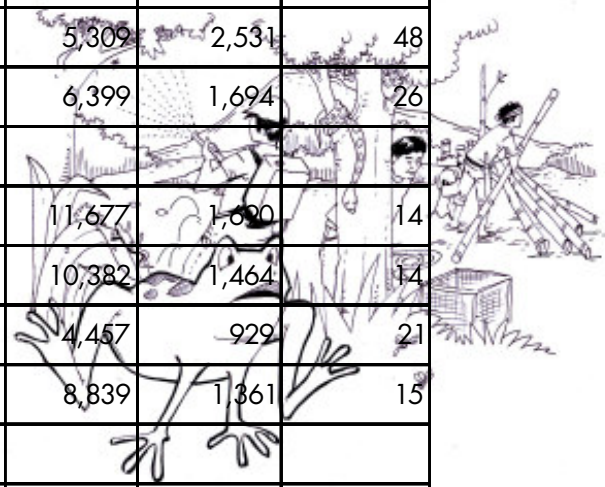
Dry Season (\$1 = Kip 2,500)

Rainy Season (\$1 = Kip 3,850)

	Dry Season (\$1 = Kip 2,500)				Rainy Season (\$1 = Kip 3,850)			
	Adult Equiv.	Total food (kip/day)	Forest food (kip/day)	Forest food % of total	Adult Equiv.	Total food (kip/day)	Forest food (kip/day)	Forest food % of total
<b>Khamteuy</b>								
HH1	2.8	4,246	462	11	2.9	6,381	1,316	21
HH2	4.7	2,889	267	9	4.7	7,506	1,234	16
HH3	6.9	2,278	341	15	4.6	5,309	2,531	48
Average	4.8	3,138	357	11	4.1	6,399	1,694	26
<b>Konglunoi</b>								
HH1	7.4	4,605	591	13	7.9	11,677	1,690	14
HH2	5.5	8,884	1,017	11	5.6	10,382	1,464	14
HH3	2.6	2,636	255	10	2.6	4,457	929	21
Average	5.2	5,175	621	12	5.4	8,839	1,361	15
<b>Nongthe</b>								
HH1	5.2	4,059	361	9	5.2	7,016	1,081	15
HH2	5.0	3,947	156	4	5.1	5,749	741	13
HH3	2.8	2,486	242	10	2.8	3,761	760	20
Average	4.3	3,497	253	7	4.4	5,509	861	16

**Community Perceptions of Food Resource Management**

In recent years, the area covered by the study has been subject to commercial logging, and the effects of war and recurrent insecurity have continued to influence traditional patterns of resource use and farming by restricting access to forest and village land. Wildlife and forest resources were plentiful until the early 1980s, but population pressure has imposed increasing demands on natural resources, leading to a decline of the overall resource base on which the villages depend. Production of rain-fed rice underpins the livelihood system, but



declining soil fertility and unreliable rainfall have led to serious rice shortages. While the forest continues to play an important role in the village livelihood system, particularly as a source of daily food, forest resources are becoming less plentiful due to competitive harvesting and habitat loss.

## Traditional Resource Sharing

Village elders recount how traditional sharing operated in the past, when resources were abundant and gathering was for family consumption only. Aware of their own contribution to resource decline, villagers acknowledge that overharvesting has exceeded the replacement capacity of key food species. Traditional methods of fishing and hunting have given way to more expedient but destructive practices, including the use of guns, fine mesh nylon nets, poison, explosives and battery torches, thus encouraging indiscriminate collection of under-size fish and tadpoles, and large quantities of frogs. There is also concern about destructive methods and high harvesting levels of bamboo and *Pandanus*. Free ranging cattle are reported to cause damage, and previously recognized rights of use to certain sites and resources are being ignored.

**Table 2.** VILLAGER ANALYSIS OF TRADITIONAL RESOURCE SHARING

<b>Strengths</b>	<ul style="list-style-type: none"> <li>• Strengthens cooperative sharing within and between villages</li> <li>• Encourages working together to meet common needs</li> <li>• Problems can be resolved to avoid sanctions and conflict</li> <li>• In the past, resources were plentiful and provided for everybody</li> <li>• Traditional collection methods conserved resources</li> <li>• Traditional sharing and rights are respected by villagers</li> </ul>	<b>Weaknesses</b>	<ul style="list-style-type: none"> <li>• Equitable sharing is difficult</li> <li>• Many people are competing for declining resources</li> <li>• Leads to conflict as difficult to protect resources according to rules</li> <li>• Leads to forest and resources loss through careless use, cutting trees, hunting, burning</li> <li>• Harvesting practices and equipment (poison, nylon nets, explosives, battery torches) are destructive</li> <li>• Traditional rights are not always acknowledged in official rules and regulations</li> </ul>
<b>Opportunities</b>	<ul style="list-style-type: none"> <li>• There is an opportunity for sustainable resource management if:               <ol style="list-style-type: none"> <li>i) people are aware of needs and benefits of conservation</li> <li>ii) boundaries are clearly defined, mutually agreed and respected by neighboring villages</li> <li>iii) rights and regulations are jointly planned, agreed and respected</li> </ol> </li> </ul>	<b>Limitations</b>	<ul style="list-style-type: none"> <li>• Villagers cannot ensure sustainable resource management without adequate support from district, provincial and NBCA authorities in:               <ol style="list-style-type: none"> <li>i) developing awareness of conservation</li> <li>ii) enforcing regulations</li> <li>iii) applying sanctions</li> </ol> </li> </ul>

These infringements represent a loss of livelihood resources as well as a potential source of conflict. Villagers agree that greater control over resources is needed in order to reduce the impact of competitive and destructive harvesting. Clearly-defined village boundaries should help in this respect, but due to a strong cultural sense of sharing, established patterns of open access sharing still influence resource use (*Table 2*). Although the NBCA was designated in 1993, heavy resource use within the area continues. This involves not only the permitted gathering of food resources and other NTFPs, but also ongoing hunting and burning, for which no one takes responsibility, least of all the NBCA authorities who, the villagers claim, are unable to monitor the area or impose sanctions.

## **Land and Forest Allocation**

Since land and forest allocation was carried out in 1998, Khamteuy and Nongthe have accepted responsibility and formal use rights for demarcated sections of the NBCA. Reportedly, conservation awareness has improved among neighboring villages, who have agreed to report instances of fire, tree cutting and wildlife hunting to the district authorities. However, numerous examples of ongoing conflict over resource use were mentioned. For example, destructive harvesting of *mak chong* by cutting down trees in the area allocated to Khamteuy in 1998 was seen as a serious infringement of the hitherto recognized rights of Khamteuy villagers to this valuable resource.

Problems were also reported between Khamteuy and the northern villages of Budtapan and Phoupie in Savannakhet Province over nonrecognition of fishing restrictions in a designated reserve reach on the Xe Bang Nouan; in addition, encroachment into rice fields and village forest by neighboring villages was commonplace.

Although they acknowledge the potential benefits of land and forest allocation, villagers report ongoing hunting, tree cutting, destructive harvesting and forest fires. Despite agreement on the part of village committees, illegal harvesting and burning continues, but penalties do not serve as deterrents due to lack of villager awareness and low levels of enforcement. There is inadequate cooperation amongst villages, and management is difficult due to fear of conflict. But even when village boundaries are clearly defined, and land and forest allocation takes effect, available resources must still be shared. Therefore, the traditional system continues to have relevance, forming the basis of future resource management.

## **Sustainable Management of Key Food Resources**

The key food resources identified by villagers, based on ecological status, importance for subsistence use, and potential for income generation, were fish, frogs and bamboo shoots. Villagers reviewed current harvesting practices in relation to growth, regeneration and life

cycles of the species concerned, then proceeded to design sustainable harvesting and management systems. The following are some proposed components of these systems:

- (For fish and frogs) Establishment of defined breeding and reserve areas, and controlled breeding;
- (For bamboo) Individual planting around family rice fields, and shared use on village land;
- Planting of fodder species (*mei du* for cattle and *kabuk* for pigs);
- Prohibition on the sale and exchange of forest food resources until productivity has increased through sustainable management;
- Cooperation within the community and with neighboring villages in order to share and manage resources sustainably;
- Securing the support of district, provincial and NBCA authorities for the management systems that have been formulated and agreed by the communities; and
- Strict enforcement of rules.



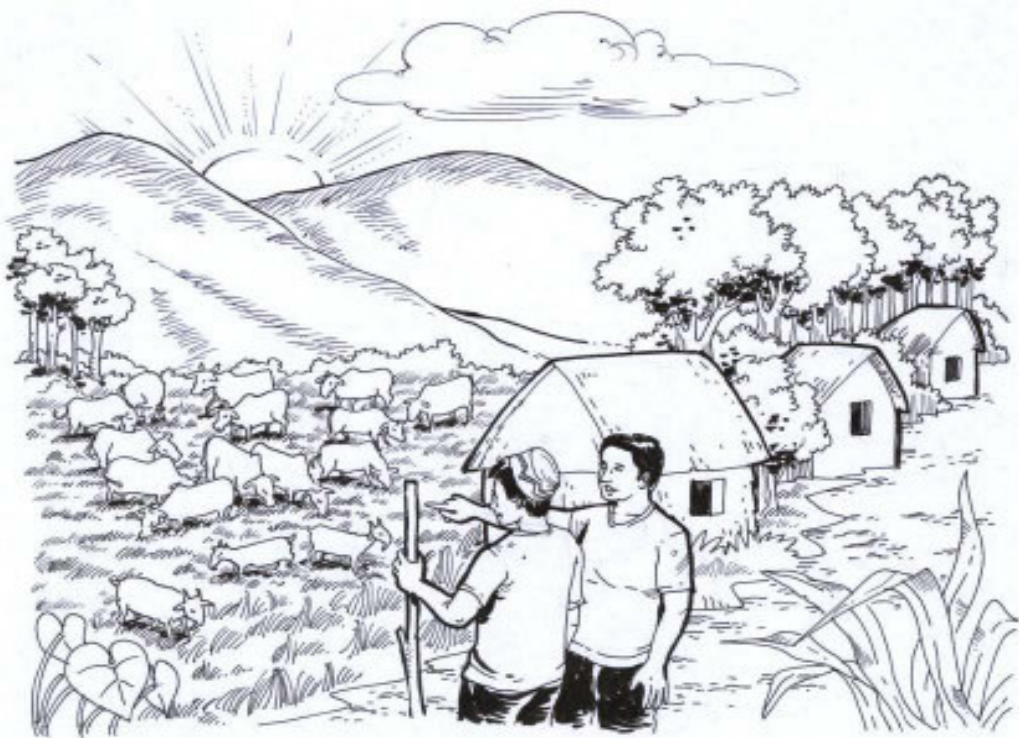
## Towards Food Self-Reliance

The social cohesion and adaptive capacity of the southern Lao communities have enabled them to survive as largely independent economies with minimal inputs from outside. Nevertheless, their dependence on the forest for food and other products remains a critical aspect of their livelihood.

As marginalized communities living in difficult conditions, their future depends on sustaining the natural resource base. Therefore, promoting self-reliance based on community management of locally available resources offers a vitally important opportunity for conservation and development.

This Resource Book is produced by the Asian NGO Coalition for Agrarian Reform and Rural Development (ANGOC) [angoc@angoc.ngo.ph](mailto:angoc@angoc.ngo.ph) and the International Land Coalition (ILC) [coalition@ifad.org](mailto:coalition@ifad.org).

# Restoring Nepal's Hillforests through Community Based Forestry Leasehold



**T**he hill forest ecosystem of Nepal supports the livelihood (including animal rearing and crop production) and spiritual needs of the hill population. Human pressure on the hill forest ecosystem has increased to such an extent that some 200 hectares of forest per day are cleared, converted, or reduced to shrub/bush lands. This has resulted in the loss of plant species and high levels of erosion, which has in turn led to the loss of soil nutrients. Agricultural productivity has suffered as a result, and rural incomes have declined. Forty-five per cent of Nepal's hill population currently lives below the poverty line.

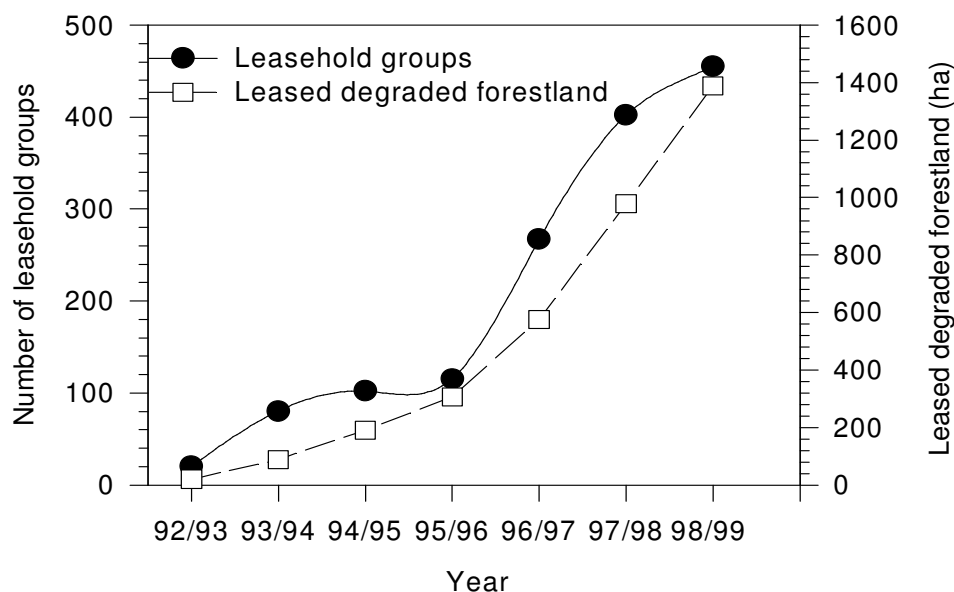
## Source

Madan K Gautam, Eryl H Roberts, and Bijay K Singh, "Community-Based Leasehold Approach and Agroforestry Technology for Restoring Degraded Hill Forests and Improving Rural Livelihoods in Nepal".

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mgautam@anu.edu.au

A community-based forestry leasehold approach that has been tried by the Government of Nepal appears to be meeting its objective of restoring the degraded hill forest ecosystem as well as improving the livelihood prospects of the mostly poor hill population.

**Figure 1. LEASEHOLD GROUPS AND THE CORRESPONDING DEGRADED FORESTLANDS HANDED OUT**



**Source:** recalculation from the project data: FAO, 2000

In 1993, a Government project leased degraded forestlands and granted the leasehold land tax-free to eligible families (*i.e.*, those below the poverty line) to whom it also provided training and some production input. The Hills Leasehold Forestry and Fodder Development Project was launched by the government of Nepal with assistance from Food and Agriculture Organization (FAO) and the International Fund for Agricultural Development (IFAD). The leasehold groups were given charge of protecting the land from grazing and fire, and with regenerating the land both naturally and with agroforestry plantations of multipurpose tree and crop species.

From 1993-94 to 1998-99, forestland was leased under the project at an exponential rate. (See Figure 1). Restoration support activities were then conducted, such as the distribution of over 5.5 million seedlings of multipurpose forest-tree and fruit-tree seedlings along with planting stocks of grasses.

The project has since resulted in a 70 per cent increase in forest cover, and overall improvement in the income levels of leasehold families.

## Program Approach

### ***Defining degraded Forest Lands and Institutionalizing Leasehold Groups***

The degraded forestlands targeted by the project for leasehold distribution range from 400 to 1,800 meters in altitude and are situated in the lower to middle hills at the northern outcrop of



the Siwalik hills and river valley. Most of these lands are of moderate to very steep slope, and were previously overexploited forest or shrub lands, eroded forestlands with low organic matter and exposed rock and stones with low moisture holding capacity. Overgrazing and frequent forest fires had led to such conditions. The other leasehold lands were either failed plantation sites, or encroached forest areas that had been abandoned.

Blocks of such lands were identified and leased to groups of families living below the poverty line. Thereafter, six or more enlisted families formed a group, selected their officers, and designated a name for themselves. A certificate of leasehold of degraded forestland was then issued to the group by the Department of Forest, granting them a 40-year lease on the land, at the rate of one hectare per family.



## Management Strategies and their Expected Outcome

Three main management approaches have been used in restoring degraded leasehold forestlands:

### 1. *Natural regeneration through land management*

Once the degraded forestland was officially handed over to the groups, the members felt a sense of security and ownership of the land. This sense of ownership made them conscious of the need for long-term management of the forestland.

Forest fires and unregulated livestock grazing are usually the major stumbling blocks to natural forest regeneration in Nepal. However, in recent years, no fires have been reported among over 600 groups of leased forestlands. Similarly, the groups stopped grazing their cattle, and managed to control and eventually stop, grazing of cattle from nearby communities. This has resulted in a 75 per cent reduction of forestland grazing, thus promoting natural regeneration and establishment of the regenerated seedlings.

Leasing out forestland to groups aimed to:

- 1) Provide a sustainable institutional setting for the leaseholders and empower them for leasehold land development;
- 2) Have the group members work together on the parcel of leased land and share the output equally rather than “fragment” it for the benefit of individual families; and
- 3) Establish a self-regulating mechanism (e.g., if a leasehold member breaks the rule, the entire leaseholder group suffers).

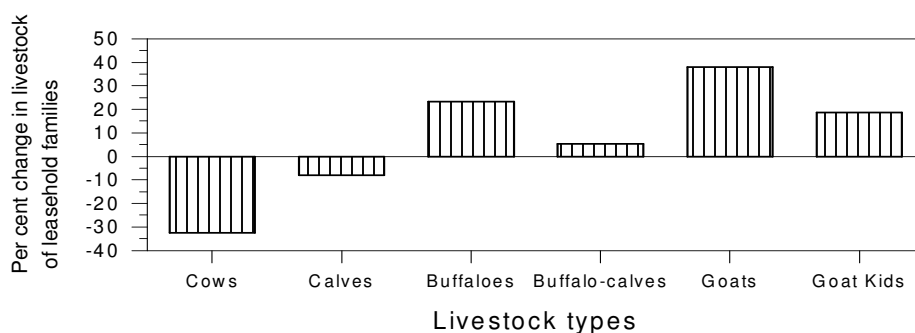
## 2. Establishment of buffer strips against encroachments on forestland

Forty-three leasehold groups in Sindhupalchok have restored about 120 hectares of forestland with forest vegetation. A buffer strip put up between farm and forestland has also put a stop to further forest encroachment. Nepal farmers habitually encroach on forestland by extending farmlands into adjoining forests. Leasing degraded forest strips has prevented private landowners from encroaching on forestland. Also, as the leaseholders developed a feeling of ownership on the forestlands, they engaged in agroforestry, growing both forest and non-forest annual crops.

## 3. Plantation in abandoned forestlands

Degraded forestland has been restored using agroforestry practices, such as the planting of multipurpose tree species to stabilize the slope. About 120 hectares of forest that had been degraded due to shifting cultivation has been restored under the leasehold forestry program in Chitwan and Makawanpur districts.

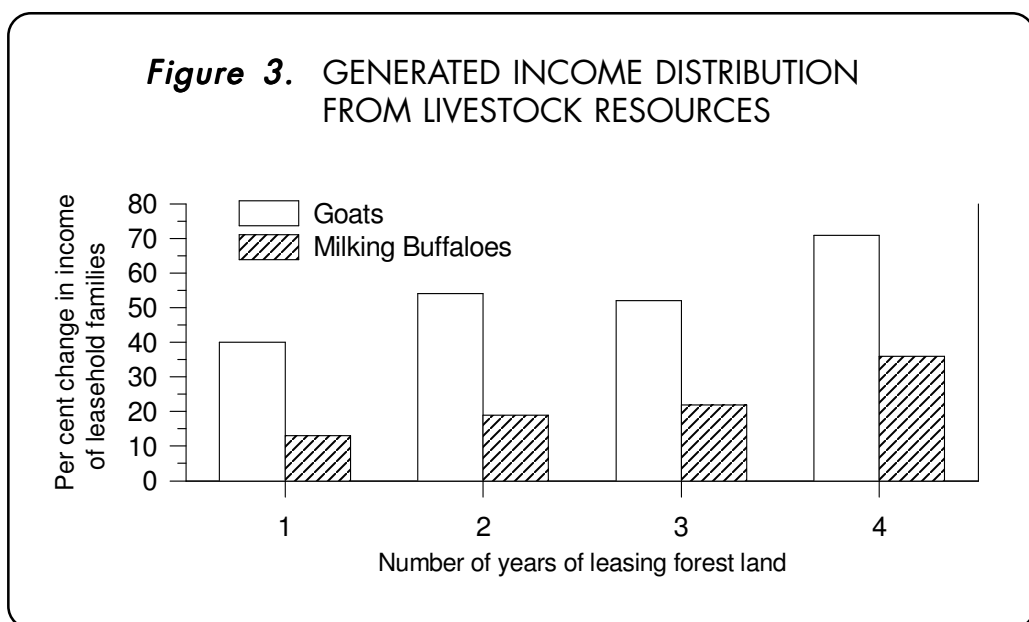
**Figure 2.** AVERAGE CHANGE OF LIVESTOCK TYPES FROM EXISTING BREEDS TO SELECTIVE IMPROVED BREEDS OF PER FAMILY



With more animal feed being supplied through the cultivation of multipurpose tree species and forage species, a change in farming systems, especially the type of livestock being reared by the leasehold families, took place. Figure 2 shows a decrease in the number of less productive cows and calves being reared by 32 per cent and eight per cent, respectively, and an increase in the number of productive buffaloes and goats by 24 per cent and 38 per cent, respectively. The change in livestock quality resulted in an increase in income from 40 to 70 per cent from goat sales, and 13 to 36 per cent from milk sales (See Figure 3).

In 1995, the leasehold communities started reaping their first products. Although grazing was banned, wild grasses used as animal feed and roof thatch, and sal leaves from the thinning of the naturally regenerated seedlings could be collected after a year. Silviculture operations followed. In the second year and onwards, the forage grown in plantations could be collected and used to feed the leasehold families' livestock. The ready supply of forage also encouraged the rearing by leasehold families of higher milk-yielding cows and buffaloes. Crops such as lemongrass, forage seeds of stylo, and molasses yielded additional cash income starting from the second year of the program. Later, from 1997 to 1998 and onwards, fodder trees such as

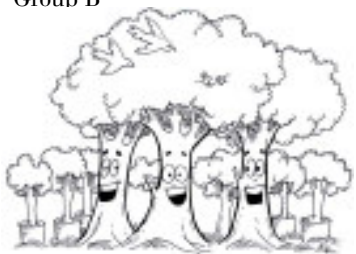
Badahar, Ipil-ipil, Tanki, Mulberry began to be harvested. Until recently, most of the forage seed was imported. The introduction of forage crops as an understory of forest trees provided forage as well as seed for the local market.



## Program Impact

To understand the program's impact, the most recently established leasehold groups were studied. The results gathered are summarized in *Table 1*.

**Table 1. IMPACT OF THE LEASEHOLD APPROACH ON SELECTED LEASEHOLD GROUPS**

Effects of Leasehold Approach	
<p>1. Ramanthali Leasehold Group — composed of 7 families and 3 independent female and 4 male members</p>	<ul style="list-style-type: none"> <li>• Increase in social capital (another 18 groups were formed by mid 1998-1999)</li> <li>• Formation of a cooperative of leasehold groups</li> <li>• The cooperative sells seeds of forage species, mainly stylo, and earn more than <math>7.0 \times 10^6</math> Nepalese rupees per year (Rp 80 = \$1)</li> </ul>
<p>2. Angare Bhatta Group A and Group B</p> 	<ul style="list-style-type: none"> <li>• Restoration of the degraded leased forestland through the establishment of tree plantations to supply firewood and timber needs; removal of weeds and shrubs to encourage seedling growth; putting up of a construction trail and fire control lines; sowing of forage seed; gully control by planting grass and forage</li> <li>• Forage and grass production</li> <li>• Naturally established trees started covering up the ground</li> <li>• Forage production and tree coverage motivated the enlistment of 17 groups from surrounding communities.</li> </ul>
<p>3. Dalantar Pakha leasehold group</p>	<ul style="list-style-type: none"> <li>• Degraded forestland became relatively productive</li> <li>• 50 leasehold groups forming cooperatives</li> </ul>

## Impact of the Leasehold Approach

The leasehold approach has so far yielded favorable outcomes. *Table 2* provides a comparison of the leaseholder's economic, social and cultural situation before and after program implementation.

**Table 2.** THE ECONOMIC, SOCIAL AND CULTURAL SITUATION OF THE LEASEHOLDERS BEFORE AND AFTER THE PROJECT IMPLEMENTATION

Concerns	Before	After
DOMESTIC and EDUCATIONAL CONCERNS	<ul style="list-style-type: none"> <li>Female pupils give up after three to four years of schooling.</li> </ul>	<ul style="list-style-type: none"> <li>The restoration of leasehold lands increased incomes progressively. By raising incomes and reducing the time spent on collecting fodder, the project allowed parents more time with their school-going children, assisting and encouraging them in their schoolwork. It also lessened the children's involvement in household activities, hence giving them more time for their studies. As a result, the dropout rate was significantly reduced.</li> </ul>
SOCIAL CAPITAL BUILDUP	<ul style="list-style-type: none"> <li>Before the program, women were a suppressed lot.</li> <li>In the first two years of the program, elite groups assaulted leasehold female members and carried out destructive activities.</li> </ul>	<ul style="list-style-type: none"> <li>The positive impact on women's socioeconomic condition boosted their morale, confidence and self-respect. Formation of a legally recognized leasehold group united the communities towards a common goal and encouraged them to face problems squarely.</li> <li>Increase in the number of leasehold groups spurred interactions between groups and exchange of information, technical know-how, and local experts.</li> </ul>
HEALTH AWARENESS	<ul style="list-style-type: none"> <li>People sought professional help only if they were severely ill since they were not used to buying the full course of their medical prescriptions with the little income they have or preoccupation with collecting forest products.</li> </ul>	<ul style="list-style-type: none"> <li>Health awareness along with greater financial capacity, e.g., from incomes earned from selling milk, forage seeds and green vegetables, has changed the attitude of leasehold members towards consulting medical professionals and taking medication. People now consult with the medical professional at the very early stage of their illness and take their full course of medicine.</li> <li>The change in their vegetable growing pattern increased their intake of vegetables, thus improving their diets. Surplus vegetables sold in the local market also provided additional income.</li> </ul>
FARMING SYSTEMS and FOREST PRODUCT NEEDS		<ul style="list-style-type: none"> <li>The greater availability of animal feed through the cultivation of multipurpose tree species and forage had a positive effect on the farming systems, especially the rearing of livestock. <b>Figure 1</b> shows a decrease in less productive cows and calves by 32 per cent and eight per cent, respectively, and an increase in productive buffaloes and goats by 24 per cent and 38 per cent, respectively. The change in livestock quality resulted in an increase in income from 40 to 70 per cent from goat sales, and 13 to 36 per cent from milk sales (<b>Figure 2</b>). Similarly, the number of families benefiting from selling agroforestry farm products has increased significantly from the start of the project to its fourth year of implementation. Income generation from seed production was dominant in all the years, followed by forage/fodder (<b>Figure 3</b>).</li> </ul>

## Sustaining the Gains

The current restoration approach to managing Nepal's hill forest ecosystem, where leasehold groups have been able to develop a reciprocal relationship between meeting their livelihood support needs and managing the forestlands, appears to be sustainable. However, some issues have to be carefully looked into and immediately addressed to ensure that the project continues to be implemented in line with its objectives :

- Not enough confidence on the part of the government to entrust leasehold groups with better quality forestlands;
- Inadequate technical and educational support, especially on the biophysical interaction of trees and crops; and
- Need for market and financial (mortgage) support.



### POSITIVE INDICATORS

As a result of leasehold forestland management, there has been a significant reduction of forestland grazing by livestock, good forest fire control, terrace improvement for tree and intercropping planting, which are positive indicators of hill ecosystem restoration. Similarly, it will possibly result in a positive impact on land and water conservation of degraded hill ecosystems. In addition, leasehold forestlands have been planted with a higher diversity of multipurpose tree species and forage species, which could contribute directly or indirectly to the establishment of micro scale ecosystems.

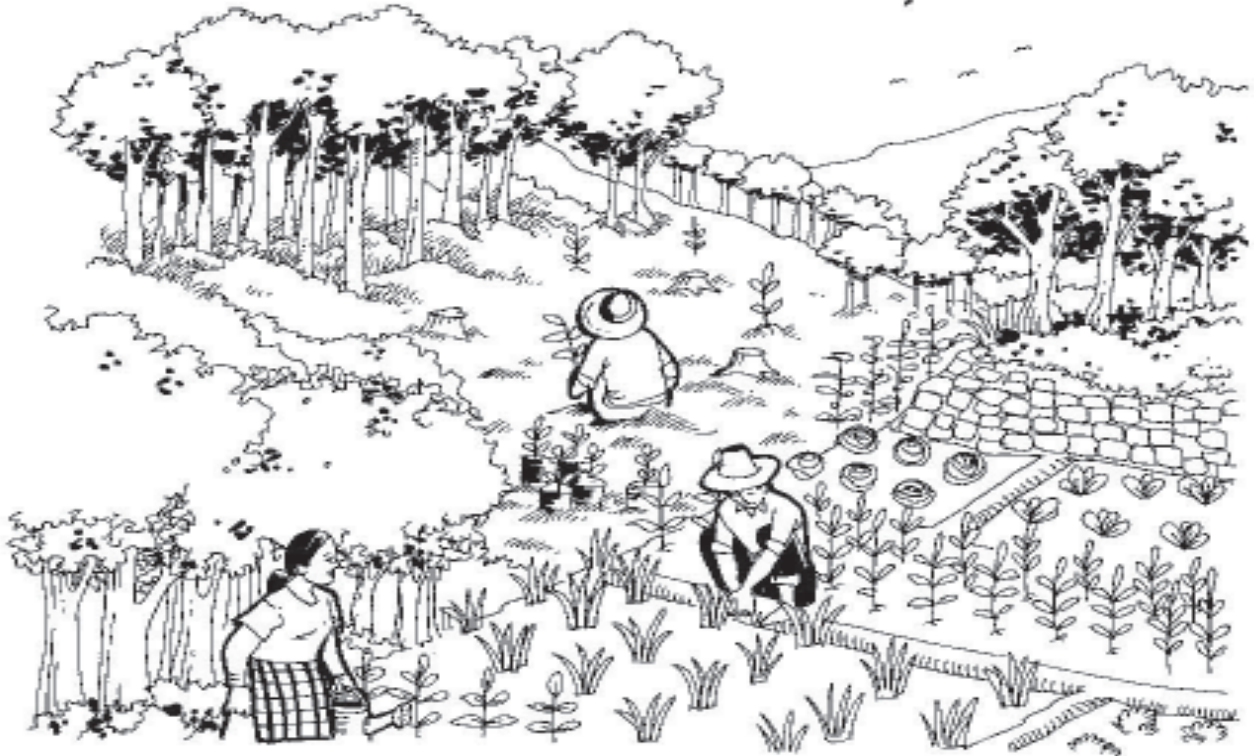
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Gautam M. K., 2000 *Social impact assessment of South Asia Poverty Alleviation Programme: Nepal* Syanja a pilot study. Impact Assessment Technical Report. SAPAP/UNDP/ UNOPS / RAS — 96-600 United Nations Office for Project Services, PO Box 13673, Kuala Lumpur — 50818, Malaysia, September 2000.

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# Factors Influencing Changes in Shifting Cultivation in Asia



Since the 1960s the peoples of the South and Southeast Asian Regions have begun to switch from the practice of shifting cultivation to more permanent agricultural methods. The following factors have influenced the search for alternatives to shifting cultivation:

***Population Growth and Limited Production.*** Population growth in the uplands has led to shortage of food, fiber and daily necessities. The low return on land under shifting cultivation has prodded communities to look for more permanent and productive methods.

***Use of Appropriate Technology and Cropping Systems.*** The introduction of farming technologies, such as terracing and the use of animal-assisted farm tools, has proven to be more productive for hill farmers in these regions. New cropping systems have also facilitated the transition process.

***Physical Infrastructure and Support Services.*** Relatively well-developed physical infrastructure and the provision of support services (e.g., credit) in Peninsular Malaysia and in some parts of

## Source

G. Rasul and G.B. Thapa, "Shifting Cultivation in the Mountains of South and Southeast Asia: Regional Patterns and Factors Influencing the Change." Regional and Rural Development Planning, School of Environment, Resources and Development, Asian Institute of Technology, Klong Luang, Pathumthani, Thailand. June 2003.

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Indonesia have enabled farmers to integrate the growing of rubber and other cash crops with shifting cultivation. Extensive road networks and access to transport have given farmers easier access to markets as well as to urban areas, where opportunities for nonfarm employment have further encouraged the shift away from shifting cultivation.

The absence of these factors, on the other hand, has deterred the adoption of new land use practices in Laos and Vietnam in spite of similar biophysical conditions in these countries.



**Government Intervention in Forest Management.** The delineation of national parks and wildlife reserves, watershed areas, and reforestation and soil conservation areas by the government has encouraged people to stay put and develop a parcel of land on a long-term basis. Usufruct rights have also helped to foster a sense of tenurial security and eventually encouraged farmers to make the necessary labor and capital investments for the development of intensive agriculture.

**Taxation and Land Tenure.** The imposition in Nepal of high taxes (as much as 50 per cent of crop production) on State agricultural land that is being used for crop production has encouraged people to produce not only to meet household needs but also to pay such taxes. The receipt for tax payments represent the grant by the government of usufruct rights to the farmers.

#### PENINSULAR MALAYSIA

Government programs are being implemented to help transform shifting cultivation to sedentary agriculture.

#### NORTHERN THAILAND

- Many fields are now permanently cropped, with some farms growing two to three crops a year;
- Crops are diversified, with fruits and vegetables replacing traditional low-input crops like maize and upland rice;
- Home gardens, fruit trees and livestock raising are integrated into the farming systems

#### NEPAL

- Permanent cultivation systems are integrated with livestock raising;
- All hill farmlands are now terraced to prevent soil erosion

**Programs for Indigenous Peoples.** Comprehensive development programs, resettlement and livelihood opportunities, and the establishment of tree plantations have all encouraged shifting cultivators and indigenous peoples to adopt more permanent farming methods.

*Table 1* summarizes the regional patterns in changes in land use, livelihood, settlement, financial positions, cropping systems and input use, as well as the degree of commercialization in areas where shifting cultivation has given way to permanent cultivation. The areas include those in northern Thailand, Java and some parts of the outer islands of Indonesia and Peninsular Malaysia, the CHT of Bangladesh, Mountains of Laos, Northeastern India, and the Mountains of Nepal.

**Table 1.** LAND USE CHARACTERISTICS IN AREAS WITH SHIFTING CULTIVATION (SC) IN SOUTH AND SOUTHEAST ASIAN COUNTRIES

Characteristics	Pattern A	Pattern B	Pattern C	Pattern D
<b>Country</b>	Northern Thailand	Java & some parts of the outer islands of Indonesia & Peninsular Malaysia	CHT of Bangladesh, Mountains of Laos, Northeastern India, Outer Islands of Indonesia	Mountains of Nepal
Relative change from SC to permanent cultivation	Major proportion changed; small area under SC	Moderate change; considerable area under SC	Little change; large area under SC	Almost entirely changed
Land Use	Intensive	Semi-intensive	Semi-intensive	Intensive
Crops	Mostly cash crops	Cash crops and cereal crops	Mostly cereal crops	Mostly cereal crops
Integration of trees and livestock with crops	Medium	High	Medium	High
Input use	Use of external inputs	Limited use of external inputs	No use of external inputs	Limited use of external inputs
<b>Means of cultivation</b>	Power tiller and tractor	Power tiller and tractor	Hoe, spade and plough	Hoe, spade and plough
Degree of Commercialization	Semi-commercialized	Semi-commercialized	Subsistence	Subsistence
Livelihood	Stable income from both farm and nonfarm activities	Besides SC considerable income from agroforestry and forest products	Besides SC settlers depend on gathering and hunting	Relatively stable but low income majority are below the poverty line
Settlement	Mostly permanent	Both permanent and temporary	Both permanent and temporary	All permanent
Dynamism in the system (savings, capital formation and investment)	High	Medium	Low	Low



## JAVA AND BALI, INDONESIA

- Shifting cultivation has been completely replaced by sedentary agriculture;
- Terraces have been constructed on hill slopes to secure sustainable crop yields;
- Shifting cultivators now grow perennial crops, such as rubber, cashew, rattan, coffee, coconut, clove and fruit trees;
- Crops are selected to meet market demand; high-value crops are preferred over bulky, low-value crops.

## LAOS

- Although still predominantly practising shifting cultivation, areas near transport facilities are beginning to practice permanent cash crop cultivation;
- Tree plantations are also increasing in the country.

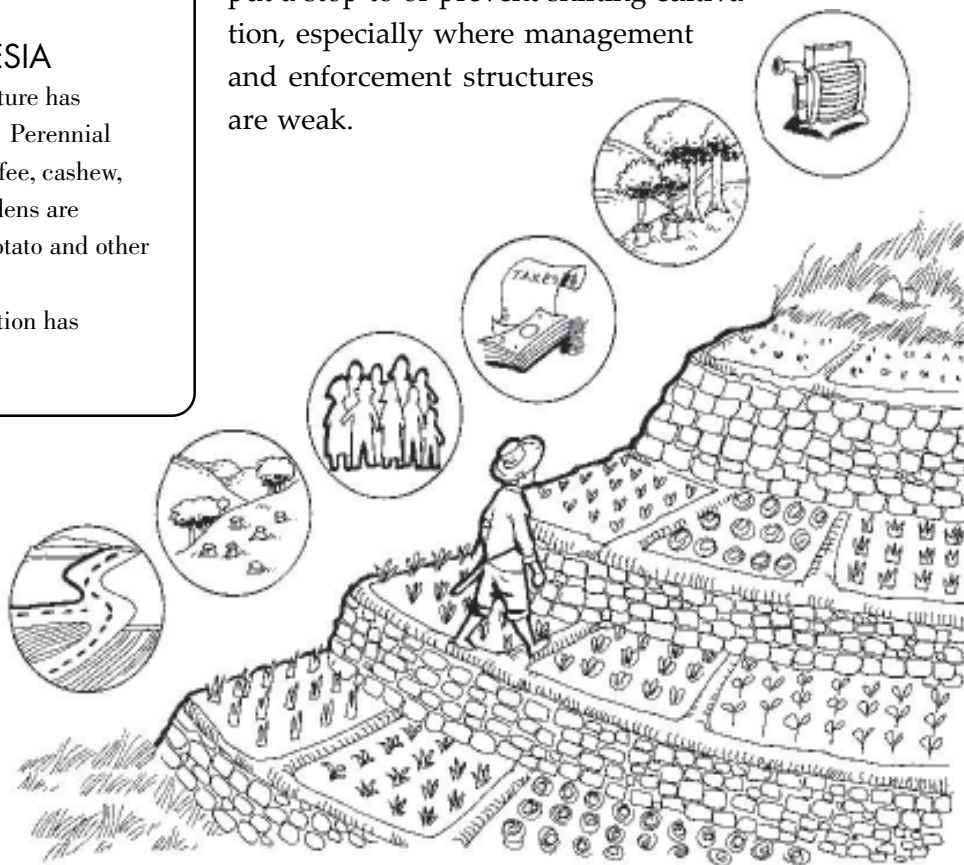
## KALIMANTAN, INDONESIA

- Tree-based sedentary agriculture has replaced shifting cultivation. Perennial tree crops such as rubber, coffee, cashew, rattan, oil palm and fruit gardens are integrated with rice, sweet potato and other upland crops;
- Terracing for wet rice cultivation has begun.

An effective shifting cultivation control strategy would require the following:

1. The grant of land ownership rights to shifting cultivators;
2. Linking shifting cultivation areas with local and regional market centers through infrastructure development; and
3. Provision of necessary support services, such as extension, credit and marketing.

Regulating or controlling shifting cultivation has been a major challenge in the mountains of South and South-east Asia. Population growth and expansion of State control over common resources do not automatically put a stop to or prevent shifting cultivation, especially where management and enforcement structures are weak.



This Resource Book is produced by the Asian NGO Coalition for Agrarian Reform and Rural Development (ANGOC) [angoc@angoc.ngo.ph](mailto:angoc@angoc.ngo.ph) and the International Land Coalition (ILC) [coalition@ifad.org](mailto:coalition@ifad.org).

# Equitable Resource Access under Shifting Cultivation Systems in Northeast India



Shifting cultivation systems in Northeast India have been extensively studied, but some aspects, like their tenurial arrangements and how they provide access to resources, are rarely dealt with. As a result, perceptions regarding shifting cultivation (known locally as *jhum*) completely overlook its unique strength: a built-in mechanism that assures access to natural re-

sources by all community members regardless of their economic or social position, and which, therefore, fosters social cohesiveness.

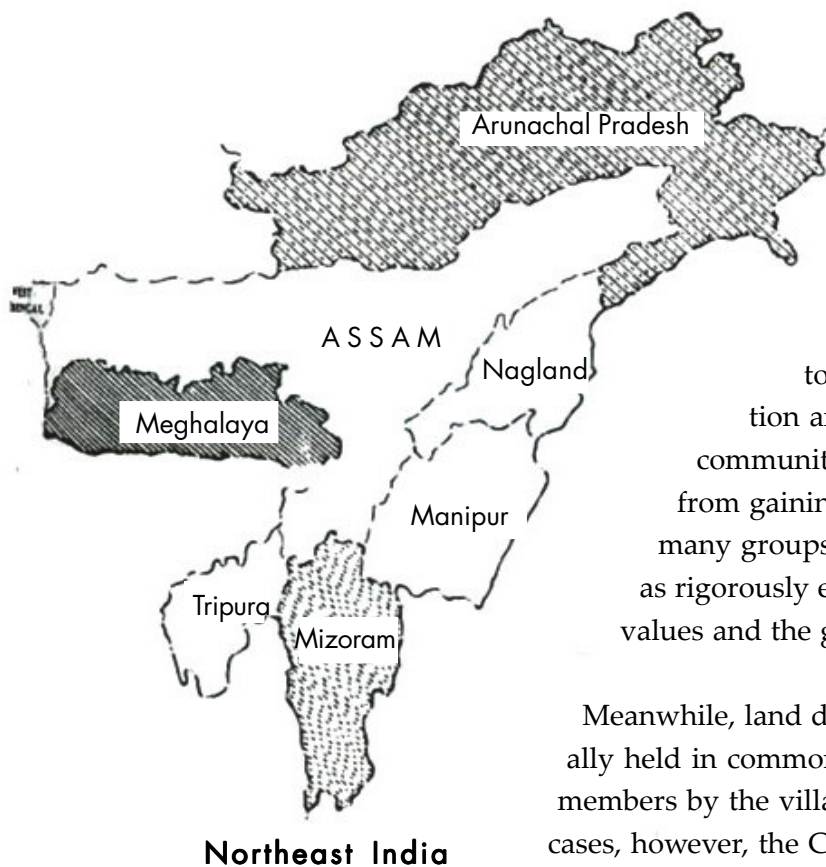
**SHIFTING CULTIVATION** is a farming practice whereby land is allowed to lie fallow after a cropping instead of being continuously cultivated.

Land ownership, holdings and tenurial arrangements vary widely among the different ethnic groups of North East India that are practicing shifting cultivation. However, a common and basic framework of tenurial arrangements can be discerned within these variations, whether the land belongs to the Chieftain or is held in common under

## Source

Dhrupad Choudhury, "Ensuring Universal Access to Resources: Tenurial Rights in Shifting Cultivation Systems in Northeast India."

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the supervision of a traditional institution like a village council. In both cases, private landholdings are confined to settlements (for housing), home gardens, and, among many groups, to private or individual forests. Individuals may inherit land, but land transfers need to be approved by the traditional institution and are restricted to members of the community. This effectively prevents outsiders from gaining control of private lands. Among many groups, however, this restriction is no longer as rigorously enforced as before, owing to rising land values and the greater inducement to sell land.

Meanwhile, land devoted to shifting cultivation is generally held in common, to be allocated among community members by the village traditional institution. In some cases, however, the Chieftain, together with clan elders, holds sway, but his decisions are always made in consultation with each household. Again, land for shifting cultivation may be inherited but may not be transferred to outsiders.

## Patch Selection and Plot Allocation

### *Patch selection*

The process of patch selection and plot allocation normally begins towards the end of the year, usually in September or November, when the rains stop. The timing could vary among different groups, depending on their location within the region (and the associated climatic variation) and the demands on labor for harvesting.

In any given year, the selection of patches for cultivation is determined by the fallow cycle. Deviations from this pattern arise where the total land available for shifting cultivation has been reduced as a result of land conversion. In such cases, the land earmarked for shifting cultivation is fragmented while the fallow cycle is reduced to make up for the land shortfall.

To further illuminate the process of patch selection and plot allocation, a description of the practice among the *Aos* of Khar Village, in the Mokokchung District, is described in the next section.

## ***Plot allocation and plot size determination***

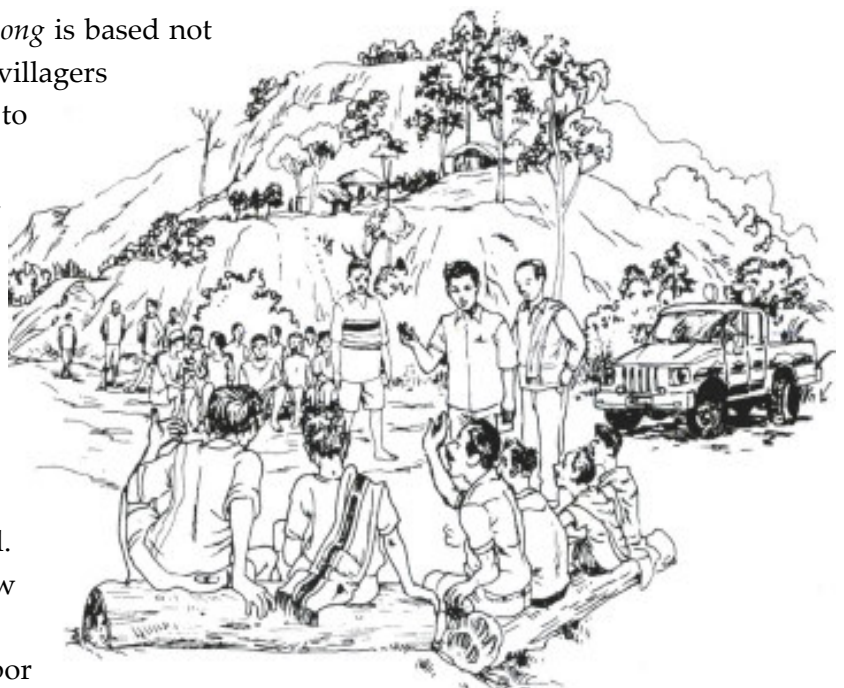
The Village Council, composed of clan elders, selects the *jhum* (or *bok*, among the *Aos*) for cultivation in the next year. As the selection of a *bok* is predetermined by the fallow cycle, this step in the process is really just a formality.

The chosen *bok* is subdivided into clan patches, or *kitong lhus*. The demarcation of *kitong lhus* within each *bok* reflects the hierarchy among the clans as well as the chronology of immigration and settlement in the village. The founding clan or clans hold the top positions in the village hierarchy, and thus get the primary sites for their *kitong lhus*; they are those whose member or members had played an important initiating role in the establishment of the village. Hence, the pecking order among the clans is determined by the role they played in the initial history of the village. Within each clan, meanwhile, member households are ordered according to the role individual members had played.

Other clans not originally part of the community may join the village, provided there is enough land left over for them and only if the clans all agree to admit new members. Thus, clans of later entrants to the village do not hold *kitong lhus* in all *boks*.

Once the *kitong lhus* have been demarcated, the clans allocate plots (or *aamong*s) to member households. In earlier days, when land was sufficient, allocating the *aamong*s was a fairly straightforward matter. But the ease with which the task was undertaken probably owed more to the fact that the *Aos* had an inherent mechanism within the traditional allocation framework to ensure that plot sizes corresponded to actual needs and availability of labor.

For instance, the size of an *aamong* is based not on family size but on what the villagers refer to as “number of mouths to feed within the household”. Hence, rather than being fixed, *aamong* sizes may vary from year to year. When household members leave the village, even temporarily, that household gets a correspondingly smaller *aamong*, thus drawing the distinction between demand and actual need. This is a perfect example of how to rationalize land resource optimization on the basis of labor availability and returns to labor.





After thus determining the plot sizes, there is usually “surplus” land within *kitong lhus* and within *boks*. This land is redistributed to households that had not been given *aamong*s within the *bok* for that particular year. These households are generally members of clans of later entrants to the village. They cannot inherit land but have limited access rights (*i.e.*, while the particular *bok* is being cultivated).

Another situation that gives rise to such short-term access to land in a *bok* is when households that had been allocated *aamong*s decide not to cultivate it, or use only a portion of it. In this case, the household may allow another household that has no *aamong* to cultivate the land. No rent is exacted but the beneficiary household may offer a token payment in kind. This system of plot size rationalization and redistribution — unique to shifting cultivation systems — ensures universal access to land resources for agriculture.

Once cultivation in the *aamong*s is over, all tenurial rights are suspended and access rights revert to the clan and the village council, in that order. At that point on and until the next cultivation, any member of the village may hunt or gather on any part of the *boks*. The clans however retain exclusive rights to harvest the produce of perennial crops that they had planted.

Access to resources — land and other resources — is thus universal and egalitarian within shifting cultivation systems, an arrangement unsurpassed by other sedentarized systems.

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# Impact of Privatization on Fallow Management



Customary tenure institutions have often viewed swidden lands as communal property. In recent years, however, this perception has come under increasing attack. A number of factors, including State policies and programs, the intrusion of market-oriented practices even in remote areas, growing populations, increasing individualism and higher expectations of living standards, as well as the weakened authority of local institutions, have all supported the trend towards the privatization of communal property.

## Source

Malcolm Cairns, "Property Rights Dimensions of Indigenous Fallow Management: Summary of Ten Intersecting Issues", Southeast Asian Regional Research Program, International Center for Research in Agroforestry (ICRAF).

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Generally, collective land tenure systems do not encourage long-term investments by farmers on better fallow management, since their access to swidden lands is merely short-term and insecure (swidden lands are frequently redistributed within the community). However, privatization does not guarantee sustainable land use either. Land commodification often leads to the accumulation of lands by the elite. This in turn leads to the social divide between the landed and the landless, as well as to arrangements like land rental, contracted crops, share cropping, etc.

**Swiddenists** are known to be pragmatists. They need to be assured of their security of land tenure before they would invest labor and capital in the management of fallow lands. Conversely, fears that the State would evict them or refuse to recognize their customary land claims may lead to a “mining” mentality, wherein resources are exploited without concern for long-term consequences.

When the number of users increase, leading to a shortened fallow cycle, swiddenists become less interested in land management. This is what is referred to as the “swidden degradation syndrome.” When they do adopt certain fallow land management strategies, it would most likely be because the State or a project requires it rather than because they see the inherent value of such practices.

## Implications of Privatization and Intensified Fallow Management

An analysis of the costs and benefits of improved fallow interventions needs to consider the various fallow products and services, as well as who has tenure over them. Communities are not homogeneous and will be differently affected by interventions. There will invariably be winners and losers, both within and between communities.

Case studies suggest that land privatization may adversely affect the more marginalized and forest-dependent subgroups within swidden communities, such as women or the landless, who depend heavily on communal fallow lands for grazing livestock, and for the collection of firewood, non-timber forest products, etc. (Gan and Xu, 1997b; Saigal, 1997).

At the regional level, as lands are increasingly mapped, demarcated and fall under private, corporate or State claims, the forest frontier will rapidly disappear. Clearly, the equity implications of land enclosure warrant careful investigation. The privatization of swidden lands may also impact other components of the farming system in ways that are not immediately obvious.



## Free-Range Grazing: Obstacle to Improved Fallow Husbandry

Young fallow lands are frequently an important source of fodder for free-grazing animals. Hence, changes in swidden practices have ramifications on the livestock husbandry. Many upland communities traditionally open their swiddens in large contiguous patches covering entire hillsides, and then subdivide plots to be managed by individual households. This practice facilitates:



- The use of communal labor;
- Guarding the swidden perimeter against wild boar, monkeys and other pests;
- Maintenance of a single access path; and
- Social fencing against livestock intrusion.

These large communal swiddens thus rotate around the village territory, with livestock generally following one year behind grazing on the remnant crop residues and native grasses.

Although this arable cropping-livestock-fallow sequence works well, it is nonetheless a major impediment to individual farmers' attempts at improved fallow management. Under these conditions, fallow crops are targeted by every hungry cattle in the neighborhood, and are quickly destroyed by overgrazing and compaction (see Cairns, 1997a).

Without fencing, improved variations of fallow management are unlikely to gain a foothold. A critical mass of like-minded neighbors is needed to reach a community consensus before adaptations can be made to the systems.

## Perils of Too Many Restrictions

Recent access to profitable market opportunities has triggered the rapid proliferation of economically improved fallow lands.

A good example is the explosion of "jungle rubber" in Indonesia in the early 1990s in response to the development of the country's tire industry and wider access to the *Havea brasiliensis* germplasm (Penot, 1997). However, State interventions in the control of fallow products tend to distort markets, increase transaction costs and lower farm-gate prices, eventually rendering the trade in fallow products economically unviable. The demise of the rattan-based fallow in Kalimantan following Indonesia's ban on the export of unprocessed or semi-processed rattan canes illustrates this danger (Belcher, 1997).

### DEBUNKING THE MYTH

The philosophical underpinnings of Asian governments' opposition to swiddening lies not only in the loss of timber assets, but also in the popular perception that fallow lands are idle and unproductive — and hence to be discouraged. Policy-makers look far more kindly on the promotion of plantation economies, *e.g.*, rubber and palm oil, that generate foreign exchange and tax revenues for State coffers. Efforts to map and classify uplands have led to increasing tensions between State agencies and resident swiddenists because of a fundamental dichotomy in how fallow lands are viewed:

- **The States' view** — forest lands are periodically destroyed by marauding slash and burn farmers and thus in need of protection.
- **The Swiddenists' view** — agricultural lands on which trees are deliberately encouraged to grow on a cyclical basis, as an integral component of a sustainable farming system.

Several studies have illustrated the often intricate and productive management of swidden fallow and their importance to household economies. It is therefore important to build strong arguments that these lands are far from abandoned — but constitute an essential phase of a wider and more rational land-use rotation.



A restrictive policy environment also discourages the production of smallholder timber as a fallow crop. Bhutanese farmers, for example, are prohibited from selling timber in the market despite evidence that planting *Pinus wallichiana* and other quality timber species is far more lucrative than current arable cropping systems (Dukpa et al., 1997).



Farmers have often expressed an interest in expanding beyond the usual monocultures, and in experimenting with promising indigenous species. However, they fear that forestry officials may accuse them of poaching from State forests. Such uncertainty makes farmers vulnerable to increased demands for graft that, coupled with royalty charges and transit permits, bite deeply into their profit margins.

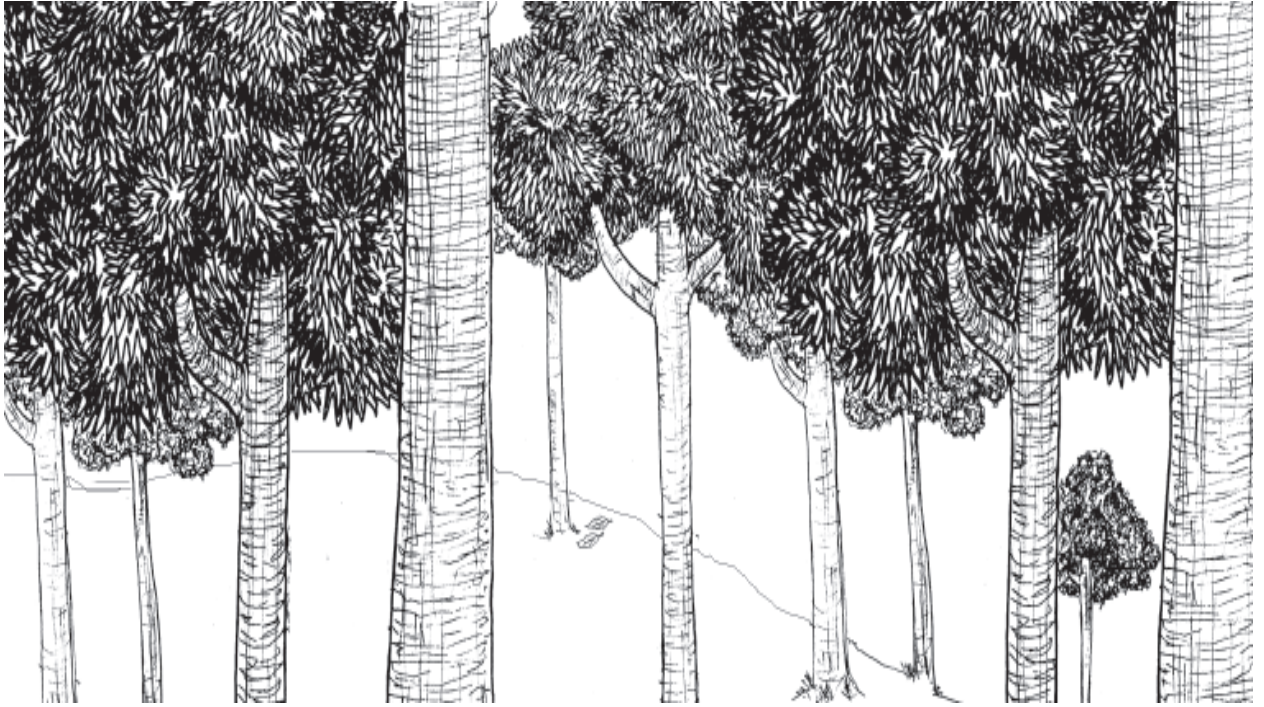
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# Private Rights in Public Forests: *The Practice of Sokshing in Bhutan*



**B**y law, all forest areas of Bhutan that have not been registered as private land are government-owned, and are called “government-reserved forests”. Under these reserved forests, however, are areas registered in the name of households as *sokshing*. These are plots of forest land where leaf litter is collected. Leaf litter is initially used as cattle bedding. After being mixed with cattle waste, it is used to fertilize the fields.

While labor intensive, this land husbandry practice increases water retention capacity, improves soil fertility, and prevents the soil from being infected with disease-causing insects and pests.

## **Sokshing Management**

Although *sokshing* are *de jure* State-owned, government recognition of their importance to the local people makes their *de facto* management more defined than that of non-*sokshing* natural forests. The management of *sokshing* evolved from indigenous practices among rural agricultural communities. Among these practices is “silviculture” (*i.e.*, the promotion of desired species). Such preferences have guided the management, composition, and structure of *sokshing* — in

### **Source**

Lam Dorji, Institutions in Forest Management: A Case of Sokshing Management in Bhutan

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particular, the emergence of the *Quercus* (oak) as the dominant species in most *sokshing*. Local people (predominantly women) periodically clear out herbs, shrubs, and seedlings of unwanted species, which would otherwise compete with the *Quercus* seedlings. In addition, the users manipulate the natural growth of *Quercus* trees by pruning the apical meristem to stimulate lateral branching. The resulting greater number of leaf-bearing branches increases the rate of litter production per unit area.

## **Institutional Arrangements in Sokshing Management**

### ***Sokshing Ownership and Resource Use***

In villages that are primarily rural, a wide range of institutional arrangements have evolved from an array of interacting social, cultural, traditional, religious and economic factors. There are many locally evolved “rules in use” guiding individual and collective action, and which are manifested in local customs or traditions that are adhered to regularly and according to need.

With the formalization of land registration after the first National Assembly in 1953, *sokshing* were also registered as part of household or community “*Sa Thrams*” (legal land register). Therefore, while indigenous arrangements defining rights and duties already existed at the village level, *sokshing* gained recognition at the national level with the official registration. The Forest Act of 1969 and amendments to the Land Act of 1978 introduced further changes to *sokshing* rights.

### ***Individual and Collective Sokshing***

Institutional mechanisms to regulate *sokshing* ownership and the use of leaf litter are employed in both *individual* and *collective sokshing*:

*Individual sokshing* are registered in the name of individual proprietors. Having or not having a *sokshing* has a lot to do with what has been inherited and registered by a household before 1969. Villagers are aware that forests, including *sokshing*, are national property and that the proprietor has private rights only to the leaf litter. However, any attempt on the part of a non-proprietor to appropriate trees without the consent of the proprietor is considered a breach of customary rules. Boundary definitions along with rough area estimates that are available in registrations are further supplemented by oral traditions and internal written agreements that serve as a basis for both informal as well as formal conflict resolution.

*Collective sokshing* are forest areas that are designated for collection of leaf litter by the “*mang*” (community people). Local rules governing use of collective *sokshing* differ from village to village. Some villages have collective *sokshing* without any specified rule or norm, and people can simply go and collect leaf litter from the *sokshing* just as they would from nonnatural forests. However, other collective *sokshing* have well-defined rules that must be adhered to (see box).

## Significance of Sokshing

*Sokshing* institutions induce a difficulty factor that enables *sokshing* to perform two important functions in protecting themselves as well as non-*sokshing* natural forests from unrestrained human access and use. These are:

- the buffer effect; and
- deterrence to optimal foraging.

### ***The Buffer Effect***

Since proprietor-monitored *sokshing* are located near the villages, other users (*i.e.*, those without *sokshing* of their own) have to travel greater distances to access non-*sokshing* natural forests for leaf litter, wood and non-wood products. Meanwhile, *sokshing* proprietors tend to limit the use of their *sokshing* to leaf collection in order to preserve its leaf litter-generating capacity.

### ***Deterrence to Optimal Foraging***

In the absence of rules, community members tend to practice “optimal foraging” (*i.e.*, first exploiting resources closer to their settlements), thereby degrading the resources to the extent that they lose much of their value to the community. In the case of individual *sokshing*, studies have shown the opposite: *sokshing* trees have higher stem densities and greater basal area per hectare. This difference may be attributed to the fact that individual

## CONTROL OF COLLECTIVE SOKSHING USE

In the village of Khankhu, the local people collectively maintain their pine forest as a *sokshing*. The village has a system, dating back in history and passed down as a customary norm, that facilitates leaf litter



collection in an equitable way. No individual may collect leaf litter before Ri Tangni (releasing or opening the forest), a period determined each year by the villagers. During Ri Tangni, all villagers have unlimited access to the forest, so that each household hires as many laborers as possible to maximize the leaf litter collection.

This informal forest management system is simply an agreed set of rules and practices which are commonly understood, strictly observed and verbally passed down from one generation to the next. This is an interesting contrast to the loose, but nevertheless well-respected individual *sokshing* institutions.

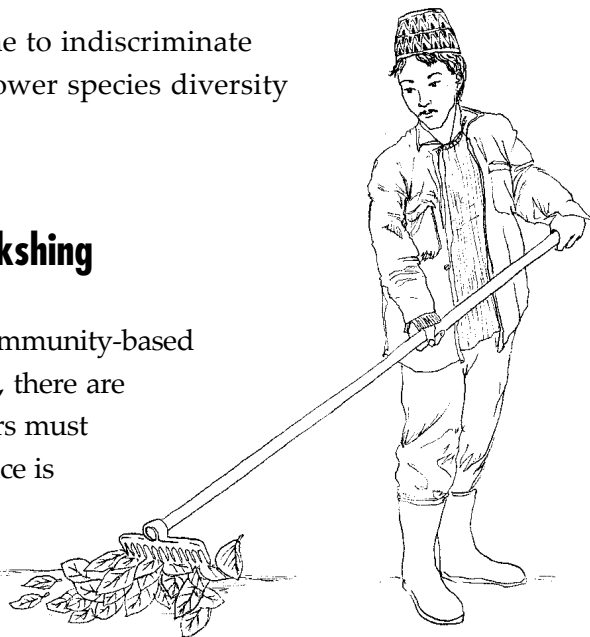
Proprietors of collective *sokshing* seriously confront rule infractions. If an individual is seen collecting leaf litter before Ri Tangni, the observer will inform other households in the village. Individuals from the households will then collectively confront the transgressor, immediately confiscate the contraband, and return it to the forest. In some serious cases, the community has taken the rule breaker to court.

*sokshing*, although closer to villages, are not prone to indiscriminate cutting. It must be noted however that there is lower species diversity in *sokshing* compared to natural forests.

## Issues and Potential Future Concerns for Sokshing

The *sokshing* practice in Bhutan is an example of community-based natural resource management (CBNRM). However, there are issues and concerns that planners and administrators must address if this valuable resource management practice is to remain relevant in the future. Some of these are:

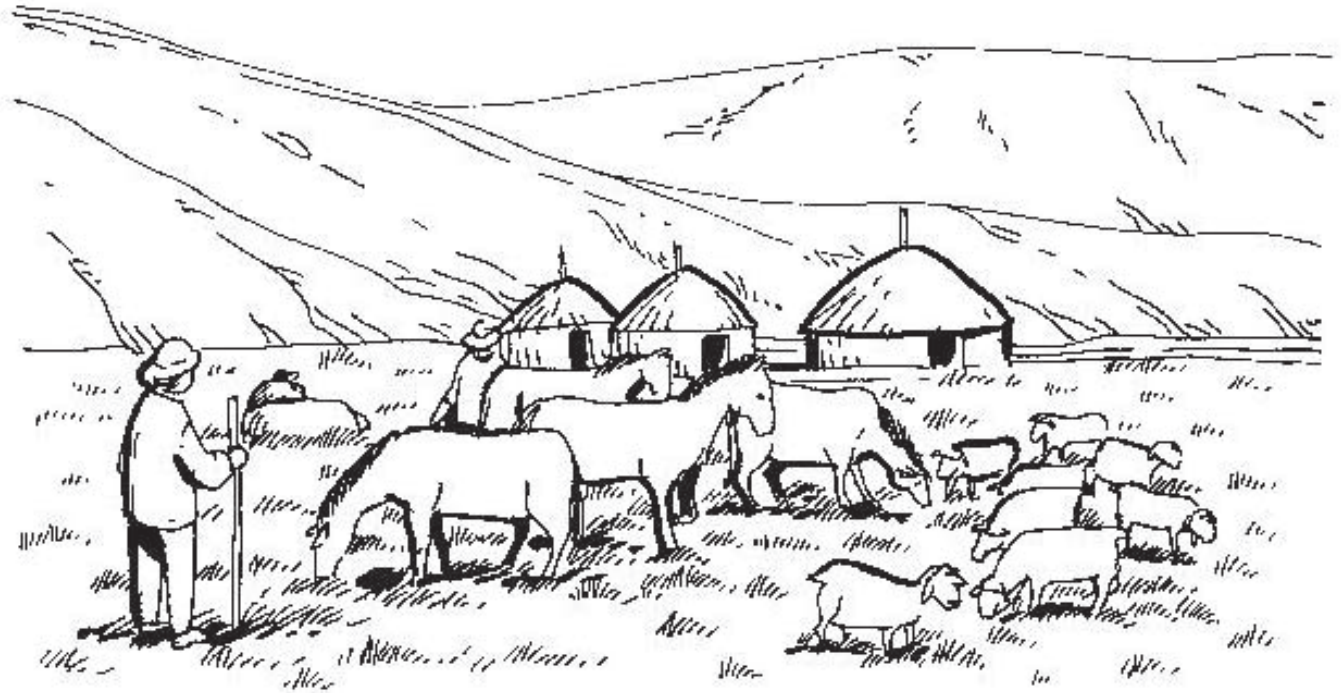
- **Regeneration and sustainability of *sokshing*.** The relatively low species diversity and minimum undergrowth or regeneration in *sokshing* may render the practice unsustainable and cause it to disappear entirely following the death of old trees because there is a long gap before the next set of trees becomes viable for litter collection.
- **Changing resource use.** The shift from the use of leaf litter to other forms of agricultural inputs, such as chemical fertilizers, which comes with economic development, may undermine the value of the *sokshing* in the eyes of local people and encourage them to cut down the trees for timber and fuelwood instead. The diminishing utility of *sokshing* in agriculture is also likely to lead *sokshing* proprietors to convert their *sokshing* into other land uses. In the event, *sokshing* would lose their capacity to deter optimal foraging and to serve as buffers between villages and non-*sokshing* forests.
- ***Sokshing* ownership.** The term *sokshing* “owner” is defined in the Forest and Nature Conservation Act of 1995 as a person with a registered *sokshing* and who has all the rights of access, withdrawal, management, and alienation. In practice, however, the law withholds alienation rights. In addition, the registration of *sokshing* implies that the government cannot allot a currently registered *sokshing* to other individuals because it remains a *sokshing* regardless of any physical changes it undergoes (e.g., disappearance of trees), or whether they are used for collecting leaf litter or not.



The immense challenges and hindrances to development posed by degrading and declining forests throughout the world make sustainable forest management critical. In this regard, the practice of *sokshing* in Bhutan’s rural forest communities can be built upon to encourage local forest management in countries facing similar conditions.

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# Community-based Co-management of Grassland Resources in Mongolia



**T**he grasslands of Mongolia, which make up about 82 per cent of the country's land area, represent the largest remaining contiguous area of common grazing land in the world. They are home to some 176,000 herding families and 23.9 million heads of livestock (2002).

Nomadic livestock producers are the backbone of the Mongolian economy. Livestock production accounted for 45 per cent of employment and 21 per cent of the gross domestic product in 2002. The tradition of herding is rooted in the country's long history, and grasslands or pasturelands have always been a common property resource.

However, more than 75 per cent of the country's grasslands are overgrazed and becoming desertified as a result of the growing number of herd families and herd sizes, severe climatic conditions, intensified agricultural practices, poor management, and the impact of the recent economic transition, among others.

## Source

H. Ykhanbai, B. Minjigdorj, E. Bulgan, and the Team, 'Co-Management of Pastureland in Mongolia.' Ministry for the Nature and the Environment, Mongolia. Case paper No. 8 dated 25 May 2004.

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In response to this situation, co-management approaches, interwoven with traditional practices, were introduced and have since yielded lessons for community herder groups, local governments, NGOs and other stakeholders.

## Grasslands as a Common Resource: A Historical Perspective

Pastures or grasslands in Mongolia have never been under private ownership. They are and have always been the property of the State and used in common by herders or customary groups.

Open ranges and grasslands used to be controlled by feudal clans and tribal groups. Even then, however, they were commonly owned and used by herders who would come and go with the seasons, bearing their herds and their families.

Herder groups used different pastures or areas for spring, summer, autumn, and winter grazing; this system was developed and adapted to meet local climatic variations and livelihood needs. Herders moved their animals and camps throughout the four seasons, and it was common for a small group of herding families (*khot ail*) to move

together to a new seasonal pasture. Within

a given season there were also shifting and rotational systems which meant that animals grazed in different areas in a seasonal pasture, as agreed by customary groups of herders and local governments.

The Great Yassa Code of 1229 linked specific groups of herders to geographically defined territories, and nomadic movements were coordinated by designated leaders.

The Khalka Djurim of 1709 further defined

customary law by providing explicit references to pasture rights, distinguishing between secular and monastery herds. It also made provisions for sacred sites and reserved camp sites; and formalized the criteria for settling disputes over campsites. In the late 18<sup>th</sup> century, other formal regulations were enacted prohibiting certain long distance movements across territorial boundaries.

Under the Soviet era (1921-1990), all croplands, pasturelands and even livestock, became the property of the State. Citizens used State pasturelands to herd State-owned animals in exchange for a salary. Seasonal grazing movement schemes and pasture use regulations were developed, adopted and administered by *collectives* as State entities. Under this system, no disputes arose between herders over pasturelands since the State, through the collectives, made most of the decisions.



In 1992, following the transition from a centralized Soviet-style management system towards a more market-oriented one, private ownership of animals was re-instituted. It was in this period that herder families increased 2.5 times, and livestock by about 17.5 per cent. Pasture management authority and responsibility was also devolved to the local level governments and herders. The new Land Law (2002) defines pasturelands in Mongolia as public property under the common use principle.

## Issues and Problems

### *Recent Economic Transition*

Following the recent economic transition, stakeholders in pasture and natural resource management are now having to “unlearn” their practices under a centrally planned economy in order to cope with the impact of the “opening up” of the country’s economic and political systems.

In the Soviet era, herders were guaranteed full employment, and some elements of the customary system were maintained. In the post-Soviet period, herders are no longer employed by the State.



Hence, old-style herding

became an easy entry option for the increasing number of unemployed. This led to an increase in herd sizes to maximize profit, and ultimately to greater pressure on the fragile environment. Between 1992 and 1999, the number of families involved in herding more than doubled, and livestock numbers increased by some 30 per cent (National Statistical Yearbook, 2002) to 33 million, a first in Mongolian history. During this transition period, the weak arrangements between herders and local administrations, as well as the lack of an appropriate management system, worsened pasture conditions and led to widespread overgrazing.

### *Open Access Lands*

The view that grasslands or pasturelands are a common resource and public property has created an open access situation. Shorter term economic and livelihood needs are pushing families to increase their herd sizes as a means of survival in the face of competitive market conditions.



### ***Increased Concentration, Less Mobility***

Herder families are also moving less frequently due to competition for land. This has led to a concentration of animals around water sources, settlement areas, haylands, and seasonal camps, and thus to a breakdown of the customary system of nomadic pastoralism, which had heretofore been an effective way of using and managing grasslands.

### ***Fragile Ecosystems and Harsh Weather Conditions***

Pastureland ecosystems in Mongolia are fragile, highly susceptible to degradation, and slow to recover. Harsh weather conditions, in the form of *dzuds* or severe winter seasons, over the last few years has had a devastating impact on the livelihood of most herders. Consecutive *dzuds* from 1999 to 2002 resulted in a combined loss of over 10 million animals, or over 30 per cent of total livestock. Almost 12,000 herding families were left without animals, and a further 18,000 were left with fewer than 100 animals (Ykhanbai et al, 2003). Coupled with the progressive degradation of pasturelands, this situation could pose a serious environmental and economic problem for the country.

### ***Limited Capacity of the State***

The limited capacity of the State to effectively monitor and manage the pasturelands has helped create an open access situation. The current capacity of national and local government for pastureland management, particularly in providing policy guidance and building the capacity of resource users, needs to be strengthened. There also has to be a more visible and appropriate policy to support communal arrangements for common property resources such as pasturelands.

## **Testing Co-management Approaches**

In response to the issues cited above, co-management approaches to natural resource management were introduced through a project called "Sustainable Management of Common Natural Resources in Mongolia". This was supported by IDRC-Canada, and implemented by the Ministry of Nature and Environment in collaboration with other ministries and NGOs.

The project sought to address the challenge of environmental degradation through a combination of participatory and action-oriented field research in three *sums* (districts). These districts are representative of Mongolia's herding systems, its three main ecoregions (steppe, mountain-steppe, and steppe-

***Co-management*** is the sharing of authority and responsibility among stakeholders, a decentralized approach to decision making that involves user groups as partners or co-equal decision-makers with government.

**(Jentoft, 1989; Pinkerton, 1989; Berkes, 1991)**

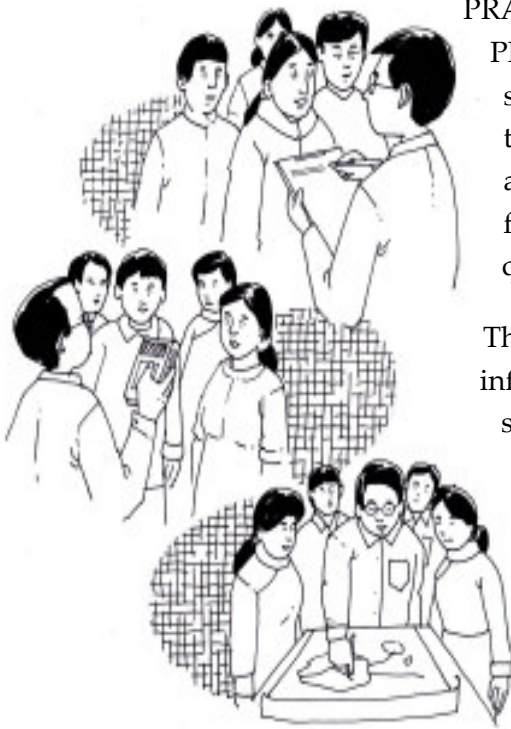
forest), and the different forms of social organization, and were thus selected in order to test the feasibility of co-management arrangements in different settings.

The Project aimed to develop more community-centered or participatory approaches to natural resource management based on co-management principles. It sought to modify traditional systems by providing policy and institutional arrangements at the local and national levels. Such policies and arrangements should allow for more herder group rights and responsibilities.

## **Project Approaches and Strategies**

Prior to the start of the Project, a one-year study was carried out to understand the issues of pasture management, conduct a profiling of various ecosystems, and to learn participatory rural appraisal (PRA) methods. A multidisciplinary team of eight women and seven men was constituted, most of whom were born and grew up with their herding families.

### ***Participatory Rural Appraisal (PRA)***



PRA was used as a general method for the study. Various PRA tools, such as focus group discussions (FGDs), semi-structured field interviews, household surveys, oral testimonies, mapping of herd movements, gender assessment study, seasonal diagramming, and semi-formal interviews with individuals, were used for qualitative analysis.

The use of PRA facilitated the following: generating information and information sharing among the stakeholders; prioritization of problems; identification of pasture management practices; and mapping of natural resources, seasonal pastures, water sources, infrastructure, etc. PRA also fostered a sense of “ownership” of the pastureland; heightened awareness of environmental and socio-economic problems, and the need to protect and manage pasturelands; promoted accountability and transparency; and fostered recognition of the role of women.

### ***Community Organizing***

The Project team selected herders that were widely respected in the community to serve as entry points for discussion in the neighborhoods. After the PRA meetings, herders consulted with each other about the possibility of forming a community organization, and the majority agreed to form one among themselves.

## Co-management mechanisms

### *Community Herder Groups*

A group of 13 to 32 herding families compose a community of herder groups for each project area. Each group is considered as a relatively homogeneous economic or social unit in terms of family, language, history, ecosystem and other similar characteristics.

### *Co-management Agreements*

Co-management agreements are instituted among herders within a community; and between communities and local level governments. Roles and responsibilities of the parties involved are agreed upon and stipulated in these agreements.

### *Sum Level Co-management Team*

A multi-stakeholder group, called the *sum* level co-management team, is also established, with representatives from herder communities, local governors, NGOs, local schools, other (community) leaders, and some members of the project team.

### *Community Revolving Funds*

When the community organization was established, herders agreed to create community revolving funds, which were made up of contributions by members of the community. The contributions were animals, such as sheep and goat, cashmere etc. The project contributed cash for the development of small credit schemes. These revolving funds are used by the communities to organize activities and to support poor members. Some 10 communities have a fund of up to 2 million MNT.

In the beginning, only the men attended the meetings of the community organization. Later on, the women also joined. In pastoral agriculture, both women and men play important but different roles; however, the role of the women is usually undervalued. Women's groups were thus established in all the communities to increase their participation in decision-making for natural resource management (NRM). The Project encouraged women's initiatives in protecting natural resources according to inherited knowledge and customs.

Assisted by the women's groups, the community leaders organized activities among the women to support income-generating projects (*e.g.*, handicrafts, felt-making, vegetable growing); provide venues for learning from each other; and perform participatory monitoring and evaluation (PM&E) of the community's co-management efforts.

### **Capacity Building**

The Project also provided various support services, such as (1) training (in NRM, pasture management, seeding of haylands, reforestation, handicraft making, project monitoring and evaluation); (2) networking; (3) venues for sharing experiences among groups (such as inter-site, and herder-to-herder visits); and (4) institutional support (micro-credit schemes, setting up of information database, organizing community groups, drafting policies and regulations).

## **Participatory Processes and Conflict Management**

Stakeholders' equal participation in the planning process facilitated the following:

- Incorporation of all stakeholders' viewpoints;
- Support for initiatives by herders and communities;
- Sharing of knowledge among stakeholders in planning and implementation;

- Resolution of equity issues and conflicts between community and non-community herders, between herders within and outside the community organization, and between herders within the community, as well as disagreements with newcomers.

### ***Linking the local to the national***

Linkages between natural resource management policy and planning activities at local and national levels were strengthened. By facilitating the flow of information from the local to the national level, and vice versa, the Project helped to ensure that local issues are considered in the preparation of national level plans. Discussions with herder groups on the drafts of national policies and legal documents also facilitated feedback and incorporated local inputs into the national law.

## **Changes and Outcomes**

The implementation of co-management procedures resulted in the following major changes:

### ***Increased cooperation between herders, local governors and other stakeholders***

Herders became aware that the effectiveness of the mechanisms instituted depended on joint action, and thus understood the benefit of cooperating with one another and with local institutions. By being part of a community, herders became conscious of their strength as a group, to influence *sum* or *bag* governors, and to contribute to the implementation of good pasture policy. PRA helped herders understand the importance of their equal participation in NRM and to learn to express their ideas.

### ***Establishment of CBNRM institutions, increased capacity of communities, and improved livelihood for herders***

In the three years that the Project was implemented, the number of communities in the project area has increased from three to 15, and new ones are currently being established. Communities have been trained in PRA and participatory monitoring and evaluation. Women members have gained capability in PM&E. New livelihood activities have brought about short-term economic benefits to herding families. Herders have acquired new and additional sources of income, such as planting vegetables and making handicrafts. The income of herders in the study sites has increased by up to 67 per cent in the last three years.

### **Why did herders decide to join community organizations?**

Both rich and poor herders were interested in arresting environmental degradation and increasing their economic benefits. Poor herders were the most interested in being involved in CBNRM because of their need to improve their livelihood, secure their pastures, participate in decision-making, and reduce the costs of herding animals. On the other hand, the richer herders were concerned with maintaining positive social relations and ensuring the supply of labor for agriculture production. Some richer herders who refused to participate in the community organizations at the beginning joined eventually, after several discussions and negotiations with the district level management team.



## **Contents of Co-Management Contracts**

The rights and responsibilities of community members, *sum* and *bag* governors are stated in the contracts. The roles and responsibilities of all stakeholders, as agreed upon in community meetings and discussions, are also included.

### **Local governors agree:**

- To approve community rights to exploit/allocate certain pasture areas according to the laws and regulations;
- To link more effectively the *sum*'s economic and social policy with community activities, and to support their sustainable NRM and livelihood activities;
- To define community pasture borders in the *bag* and to discuss this during the *bag*'s people's representatives meeting; and
- To regulate exclusion, in communication with other governors, of outsiders from the community pasture area.

### **The community members agree:**

- To follow the community rules and regulations;
- To follow community decisions on pasture use; and
- To work in close connection with other members and to exchange experiences, etc.

The agreements are valid for four years and are assessed annually at the stakeholders' meeting.

*(As part of project interventions, several communities entered into contracts with local government on pasture use, according to the new Land Law provisions. In these contracts, boundaries for seasonal pasture were clearly agreed to in the topographic maps, and all regulatory measures, as well as responsibilities of protection and use rights were then transferred to the community.)*

## **Introduction of customary and innovative pasture use practices**

A survey in 2003 showed that 87 per cent of the community members think that community joint efforts in the shifting and rotation of seasonal pasture have improved the overall pasture quality, and that more than half of community members in all the study sites are now able to calculate pasture (carrying) capacity by themselves.

Through the protection and improvement of community hayfields, establishment of a hay/fodder fund, and preparation of additional fodder for the winter season, herders in the study sites have been able to reduce average annual animal losses to an average of six to 12 per cent.

## **Learnings and Challenges**

Mongolia's experience in community-based co-management of grassland resources has generated some significant lessons as well as highlighted a number of continuing challenges. These include the following:

1. Establishment of resource management groups within communities helps to draw people's attention to sustaining the ecosystem and relating this to rural development;
2. Broad participation, transparency and collective decision-making help ensure the success of community-based natural resource management;
3. Co-management creates an effective link between local and central governments in the context of decentralization; and between government and herder groups in the sustainable management of common grazing lands;
4. Awareness-building and understanding by all stakeholders are important in order to settle conflicts and disputes, especially among herder groups;

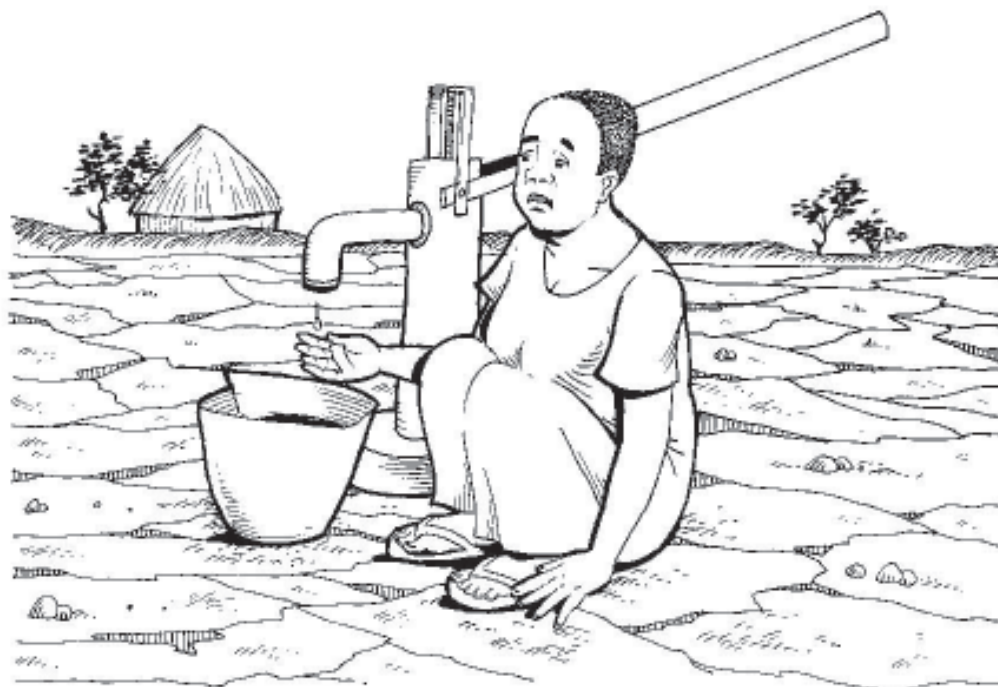
5. The optimal size of herder groups and their communities depends on the characteristics of the ecosystem, sustainable livelihood opportunities, as well as the traditions and local culture of the herder communities. Over time, it will be important for herder groups to address issues of inequalities in herder size within their groups, as well as to regulate livestock numbers, based on the carrying capacity of the ecosystem;



6. Community Based Natural Resource Management (CBNRM) should move towards a more comprehensive natural resource management that would include other ecosystems and not just grasslands, following the initial success of community-based pasture management in Mongolia; and
7. Transitional economies such as Mongolia need more time, and more supportive policies in implementing CBNRM.

This Resource Book is produced by the Asian NGO Coalition for Agrarian Reform and Rural Development (ANGOC) [angoc@angoc.ngo.ph](mailto:angoc@angoc.ngo.ph) and the International Land Coalition (ILC) [coalition@ifad.org](mailto:coalition@ifad.org).

# Right to Water: *In Search of a Legal Basis*



**W**ater is essential to life. Yet, despite universal recognition of the importance of water, the international community has shown little political will to enshrine access to this resource as a human right.

The most exhaustive and authoritative elaboration of the right to adequate water is General Comment 15 which was developed and drafted by the Committee on Economic, Social and Cultural Rights (CESCR), the agency charged with interpreting and monitoring the International Covenant on Economic, Social and Cultural Rights.

This declaration recognizes that the “right to water entitles everyone to sufficient, safe, acceptable, physically accessible and affordable water for personal and domestic use”. This statement creates both freedoms and entitlements.

## Source

Ramin Pejan, “The Right to Water: The Road to Justiciability,” IRC International Water and Sanitation Centre (IRC), *Responding to Poverty: Promoting Productive Uses of Water at the Household Level. (Statement from a symposium held in Johannesburg, South Africa, Jan. 21 - 23, 2003)*

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With regard to *availability*, the supply of water for each person should be “sufficient and continuous”. Adequate *quality* requires that water “be safe, therefore, free from micro-organisms, chemical substances and radiological hazards.” In addition, water must be of an “acceptable color, odor and taste.” *Accessibility* means “water and water facilities and services have to be accessible to everyone without discrimination...”

## Right to Water and other Human Rights

**Right to Life.** Water is sustenance. Every human being has the inherent right to life. In this regard, General Comment 6 of the Human Rights Committee states “the right to life has been too often narrowly interpreted. The expression ‘inherent right to life’ cannot properly be understood in a restrictive manner, and the protection of this right requires that States adopt positive measures.”

**Right to Housing.** The CESCR outlined in General Comment 4 that “all beneficiaries of the right to adequate housing should have sustainable access to natural and common resources, safe drinking water... sanitation and washing facilities.” The Commission on Human Rights’ Special Rapporteur on Adequate Housing states that the “full realization of the right to adequate housing is closely interlinked with and contingent upon fulfillment of other rights and services, including access to safe drinking water and sanitation. No dwelling should be deprived of water because such deprivation would render it unlivable.”

**Right to Food.** Water is essential to agriculture, and much of the food in rural areas is harvested through sustenance farming. The Commission on Human Rights Special Rapporteur on the Right to Food recommended that drinking water be treated as a public good and thus included within the right to food.

**Right to Health.** Unsafe water can lead to a number of diseases. The CESCR’s General Comment 14 on the Right to Health defines it as an inclusive one that extends not only to timely and appropriate health care but also to those factors that determine good health. Those factors would include access to safe drinking water and adequate sanitation, especially for vulnerable groups, such as pregnant women and children.

Other rights that are implicated by lack of adequate water include: the right to self-determination, and other human rights such as the right to a healthy environment and the right to development. Related to the right to life, the right to food and the right to development require the productive use of water at the household level in order to fight poverty.





The right to adequate water is also reflected in a number of international human rights declarations. Article 14 of the Convention of the Elimination of All Forms of Discrimination Against Women (CEDAW) provides that “State Parties shall...ensure to such women the right...to enjoy adequate living conditions, particularly in relation to...water supply.” On the other hand, Article 24 of the Convention on the Rights of the Child (CRC) requests States to take measures to combat disease and malnutrition “through the provision of adequate nutritious...foods and clean drinking water.”

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The United Nations declared 2003 as the “International Year of Freshwater” with the aim to, inter alia, reassert the UN Millennium Declaration Goal: “to halve, by the year 2015, the proportion of the world’s people...unable to reach or to afford safe drinking water” and “to stop the unsustainable exploitation of water resources.”

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## State Obligations

Under General Comment No. 15 of CESCR, the States must immediately satisfy the following core obligations:

- Ensure access to the minimum essential amount of water that is sufficient and safe for personal and domestic uses to prevent disease;
- Ensure the right of access to water and water facilities and services on a non-discriminatory basis, especially for disadvantaged or marginalized groups;
- Ensure physical access to water facilities within a reasonable distance from the household and with very little waiting time;
- Ensure equitable distribution of all available water facilities and services; and
- Monitor the extent of the realization, or non-realization, of the right.

States also have an international obligation to refrain from interfering — either directly or indirectly — with another country’s enjoyment of the right to water. The declaration also recommends that States facilitate the enforcement of the right to water in other countries, for example, through financial and technical assistance. Furthermore, water should never be used as an instrument for political and economic pressure and sanctions.

## Implementation and Monitoring

The declaration on the right to adequate water likewise requires States to prepare a plan to enforce the right to sufficient water at the national level. This includes the establishment of a national water policy, legislation and strategy. The formulation and implementation of a national strategy requires

good governance and compliance with principles of accountability, transparency, people's participation, decentralization, legislative capacity, and the independence of the judiciary.

In terms of monitoring, the State must use appropriate indicators and benchmarks. "The indicators should address the different components of adequate water (such as sufficiency, safety and acceptability, affordability and physical accessibility), be disaggregated by the prohibited grounds of discrimination, and over all persons residing in the State's jurisdiction." In addition, the State should set benchmarks in relation to each indicator.

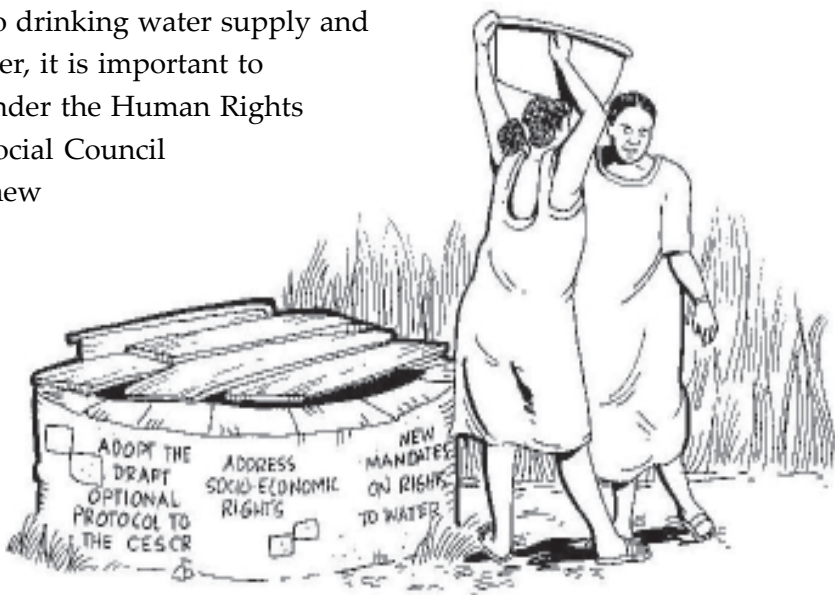
## Enforcement and Remedies

All persons or groups that have been denied the right to water should have access to effective judicial remedies and other appropriate remedies at national and international levels. The declaration also recommends that judges, adjudicators and members of the legal profession should be encouraged by the State to pay greater attention to violations of the right to water.

## What Should Be Done?

Within the U.N. human rights system, there are a number of developments that bode well for the emergence of a right to water.

1. *States should adopt the Draft Optional Protocol to the CESCR, thus creating an individual complaint system;*
2. *The Human Rights Commission should create a new special rapporteur on the right to water with the mandate to address individual complaints and urgent action appeals.* An independent expert on the right to water already exists. Its mandate is limited to undertaking a study of the right to drinking water supply and sanitation. In this connection, however, it is important to establish a new thematic mandate under the Human Rights Commission or the Economic and Social Council focusing on the right to water. This new mandate should be broadened and allow the special rapporteur to seek, receive and respond to information on all aspects of the realization of the right to water, including the urgent need to address water scarcity;



## South Africa

South Africa is one of the few countries in the world that expressly recognizes the right to water in its Constitution. It has made significant progress in creating the context for the realization of the right to adequate water by developing a national policy on water management, by enacting national framework legislation to deal with water management and water services, and by developing national strategies to implement this legislation.

The South African Constitutional Court has developed jurisprudence regarding economic and social rights applicable to the potential justification of the right to water.

In two landmark cases, the court ruled that lack of funding for a government program is not an excuse for inaction.

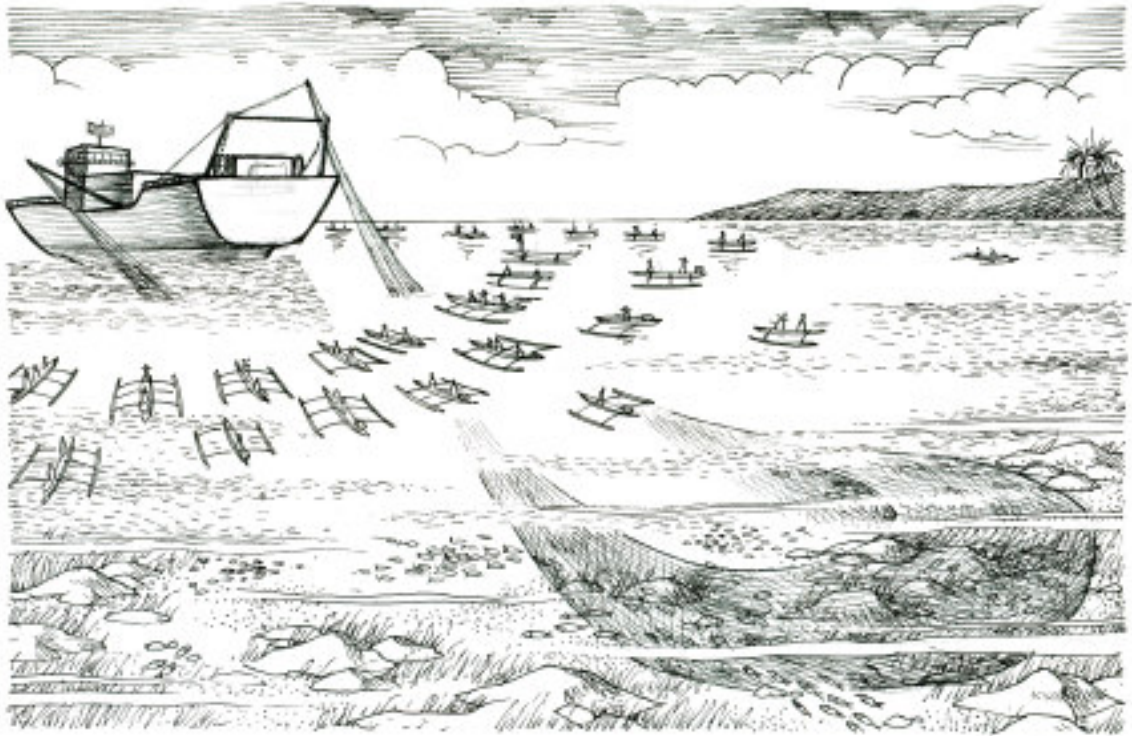
In addition, the South African government enacted two laws that deal with water rights. The National Water Act (NWA) addresses water management, and the Water Services Act (WSA) addresses water services.

Although it is premature to say that its efforts are successful, South Africa has provided and continues to provide the international community with an example of how the right to water can be implemented. In this sense, South Africa's efforts are a success, since it has created and set forth a process for important dialogue and construction with regard to the right to adequate water.

*3. Non-government organizations dealing with human rights need to pay more attention to socioeconomic rights.* It is no longer convincing to rely on excuses, such as difficulties in documenting violations, in order to get around the monitoring of how socio-economic rights are being respected.

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# Collective Action and Co-management in Fisheries



Until the late 1960s, villagers on the island of San Salvador in the Philippines enjoyed open and unrestricted access to an abundance of coastal resources. In the early 1970s, an influx of migrants, combined with the integration of the village economy into the international market for aquarium fish and a shift to destructive fishing operations, ruined the local fishing grounds, and conflicts erupted. Government claims of full control over the use and protection of marine and coastal resources did not stop the depletion or degradation of the resource.

The developing world presents many similar examples where central government management of fisheries resources is unable to either reduce overfishing or counteract destructive fishing methods. The State often lacks the capacity to enforce property rights and regulations on resource use.

## Source

Mahfuzuddin Ahmed, K. Kuperan Viswanathan, and R.A. Valmonte-Santos, "Collective Action and Property Rights for Sustainable Development: Collective Action and Property Rights in Fisheries Management", Brief 7 of 16, edited by Ruth S. Meinzen-Dick and Monica Di Gregorio, 2020 Vision Focus 11, International Food Policy Research Institute: Washington, D.C., 2004. Reproduced with permission from the International Food Policy Research Institute. [http://www.ifpri.org/2020/focus/focus11/focus11\\_16.pdf](http://www.ifpri.org/2020/focus/focus11/focus11_16.pdf)

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Fisheries are complex and interdependent ecological and social systems that require integrated management approaches. The actions of one person or group of users affect the availability of the resource for others. Managing such common pool resources requires conscious efforts by a broad range of stakeholders to organize and craft rules enabling equitable and sustainable use of the resources for everyone's benefit. Collective action is often a prerequisite for the development of community-based institutions and the devolution of authority that is required from central to local authorities.

## Collective Action in Fisheries

There is extensive evidence that communities can improve the conditions of the shared resources on which they depend. Over the past decade, the community of San Salvador has organized and established, with the help of government intervention, a marine sanctuary and reserve. An arrangement for community-based management of coastal resources fostered collective action by forming and strengthening local organizations. These organizations became responsible for marine resource management and income-generating projects, and they reduced over-fishing and other destructive practices. A local ordinance banned fishing within the sanctuary and allowed only nondestructive fishing methods in the marine reserve. The local municipal council passed an ordinance providing legal protection for the sanctuary. From 1988 to 1996, the average fish catch increased, and living coral cover and the number of coral species doubled. But not all efforts to establish collective action in fisheries are successful. Research in Bangladesh suggests that the boundaries of the bodies of water, the scale of the resource, and the type of fishery all play a significant role in determining whether efforts to foster collective action succeed. Existing property rights also influenced the types of new institutions for collective action that could be established. One community in Bangladesh was unable to regulate access to the closed fishing grounds where leaseholders had historically controlled access to and stocking of carp, even after community-based fisheries management was introduced and individual leasing was discontinued. Only through successful collective action was it possible to protect group rights over individual ones.

## Property Rights Arrangements

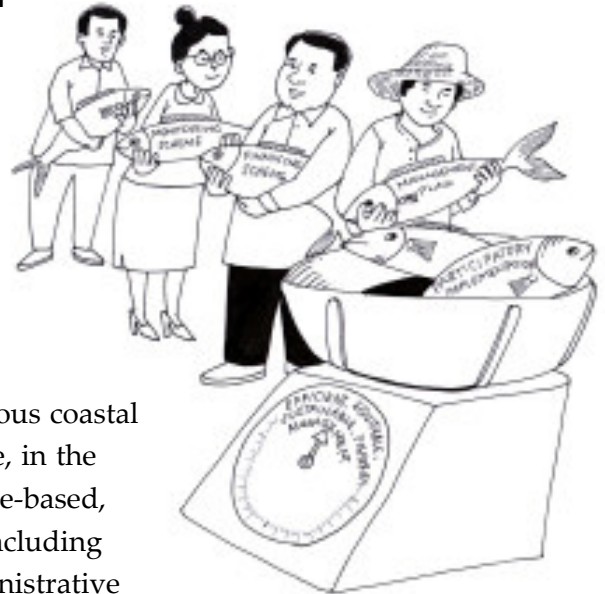
Private, State, or community control each has its own limitations in fisheries management. Private ownership often has prohibitively expensive enforcement costs and unequal distributional outcomes. Direct State control has high information costs and often lacks



monitoring mechanisms, trained personnel, or financial resources. In some cases community control excludes the poorest people from access to a common property resource, increasing inequality. Combining State, private, and community control over fisheries in imaginative ways can offer more efficient, equitable, and sustainable management. This combination is often referred to as co-management. Co-management in fisheries involves the active participation and cooperation of government, nongovernmental organizations (NGOs), organized fishers' groups, and other stakeholders in management decisions. It can help build cross-institutional collective action. It represents a more democratic governance system than State management because users are more involved in determining the rights over the fishery and in sharing decision-making authority. It improves management efficacy by drawing on local knowledge and securing higher compliance with rules.

## An Example of Successful Co-Management

Fisheries management involves multiple natural and human settings. San Miguel Bay in the Philippines is a multispecies, multigear bay surrounded by three cities and 74 coastal villages whose major livelihood is fishing. Since the 1980s conventional fisheries management problems—overfishing, distributional inequity, and limited economic opportunities—and negative impacts from various coastal and land-based sectors have been evident. Here, in the 1990s, the WorldFish Center conducted an issue-based, multisectoral, and multidisciplinary analysis (including ecological, economic, social, political, and administrative perspectives) that led to the production of a coastal environmental profile, a technical report detailing the status of fisheries, and an integrated fisheries management plan. The management plan included financing and monitoring schemes, participatory implementation plans involving diverse organizations and institutional levels, and the establishment of the San Miguel Bay Fisheries Management Council, composed of provincial and municipal government representatives, NGOs, academic institutions, and various local organizations.



San Miguel's experience highlights (1) the critical role of an appropriate human perception of the situation; (2) the importance of collective action and stakeholder participation at key stages of research, planning, and implementation; (3) the usefulness of structured decision methods for research, planning, and associated debates; and (4) the efficacy of research combined with planning efforts to ensure its utilization and relevance on the one hand and to provide a scientific basis for management planning on the other.



## Empowering Communities

Unfortunately, governments rarely undertake co-management as a means of empowering fishing communities and increasing democracy. Instead, governments often consider co-management an instrument to achieve their objectives more efficiently by involving fishing communities in the implementation process. Part of the

problem is that the organizational structures of government departments have not adapted to the new co-management concept. Most fisheries departments are still staffed with natural scientists and are almost exclusively focused on resource conservation rather than on fishing communities' livelihoods.

Collective action can help to empower poor communities, as the example of San Salvador Island shows. But effective co-management requires government to devolve real and substantial rights and responsibilities to representatives of fishing industry organizations or groups of harvesters to achieve sustainable resource management. Moreover, devolution of rights is generally not successful without collective action.

For collective action to succeed, governments and fishers should meet to discuss problems and their possible solutions and to develop arrangements for management. Fishers should be asked to express their concerns and ideas and be given an opportunity to develop their own organizations, networks, and coalitions. The government's role is to provide legitimacy and accountability for local organizations and help develop collective action institutions such as community-based and co-management organizations. Successful long-standing arrangements for marine fishery co-management, such as in Japan and Norway, all have a legal foundation.

Where authorities do not devolve some of their powers, governments can abuse co-management arrangements to extend control where it was previously absent. Government agencies need to supplement department staffing with new professional skills and develop capacity to deal with co-management processes in several communities simultaneously. Such changes may require reorienting mindsets both in government organizations and in communities.

**Governments rarely undertake co-management as a means of empowering fishing communities and increasing democracy. Instead, governments often consider co-management an instrument to achieve their objectives more efficiently...**

## The Challenges Ahead

Despite progress in achieving collective action and co-management for fisheries, a number of challenges remain:

### **1. Developing co-management institutions on a larger scale**

Many of the problems and issues facing fisheries can be solved only on provincial, national, or even international levels. Fishery resources are generally too large to be entirely within the control of a few communities. In these cases, it is imperative to provide for representation of fishery groups at different levels.



### **2. Reconciling local and global agendas**

Often, international agreements on fisheries and local environmental management contradict each other. The government needs to meet its double obligation of attending to international agreements while sharing decision-making power for fisheries management with communities.

### **3. Identifying a management knowledge base acceptable to stakeholders**

To maintain scientific validity and achieve wide acceptance, co-management systems need to reconcile both formal scientific knowledge and fishers' knowledge. One approach may be to identify science-based indicators of the status of the resource system that also reflect fishers' observations.

### **4. Developing approaches to manage conflicts**

Management arrangements may require access rights to be limited to some resource users and to exclude others, often resulting in conflicts. Participatory approaches for managing such conflicts are crucial for successful co-management.

### **5. Reforming existing institutions to empower local communities to participate in determining management objectives**

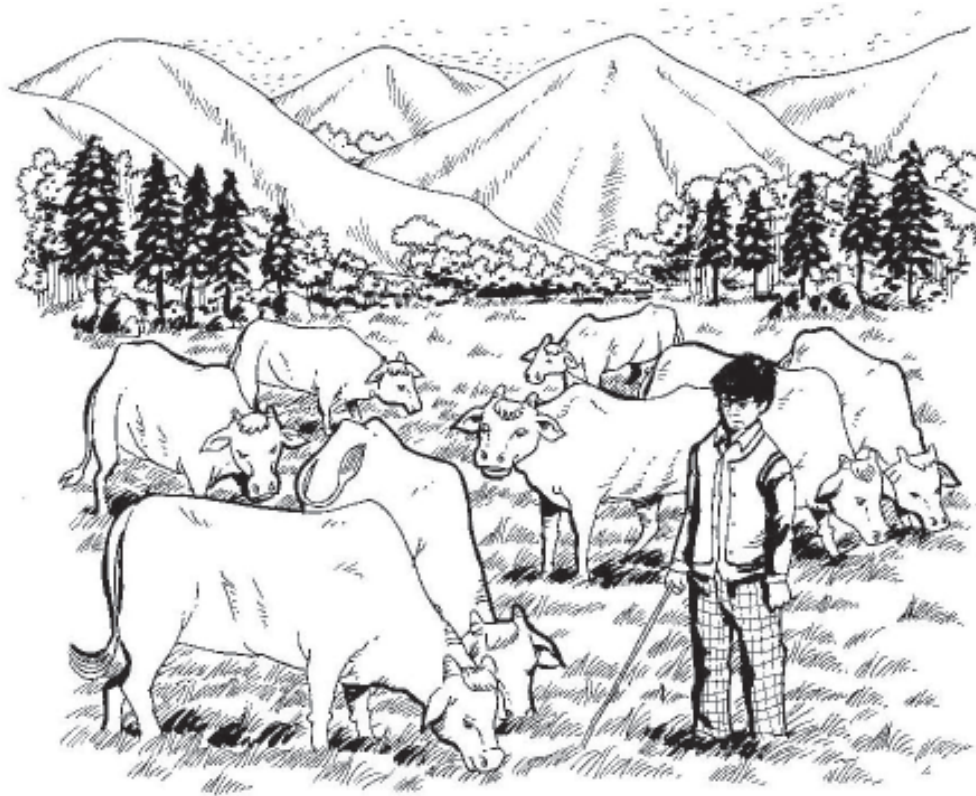
This step may require substantial changes in governmental fisheries management agencies and in stakeholders' perceptions of their respective roles.

These issues must be addressed in practical experiments with collective action and co-management. The results need to be documented and the experiences communicated to others who may be in the process of establishing or developing collective action capacity among fishers.

This Resource Book is produced by the Asian NGO Coalition for Agrarian Reform and Rural Development (ANGOC) [angoc@angoc.ngo.ph](mailto:angoc@angoc.ngo.ph) and the International Land Coalition (ILC) [coalition@ifad.org](mailto:coalition@ifad.org).



# Common Property Resource Issues in the Hindu Kush-Himalayas



**T**he Hindu Kush-Himalayas (HKH) are the highest and most populous mountain ranges in the world, extending 3,500 kilometers from east to west and home to nearly 140 million people. The total geographical area is over 354 million hectares. Of this, 5.4 per cent is used for agriculture; 24.1 per cent is forest; 32.5 per cent, pasture land; and 2.5 per cent, national parks or protected areas.

## Source

Anupam Bhatia, Suresh Raj Chalise, Camille Richard, "Institutional Innovations for Sustainable Management of Common Property Resources in the Hindu Kush-Himalayas."

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## HKH Common Property Resources

In the Hindu-Kush Himalayas, common property resources include *rangeland*, *water*, and *forest resources*.

### ***Rangeland Resources***

The HKH rangelands include native grasslands and shrublands, as well as forest areas which are often converted to shrub or grassland through the processes of grazing, burning, and abandoned



cultivation. Livestock in the HKH are primarily sustained by vast native rangelands and forests managed as a common property resource by millions of farmers and pastoralists who rely on these diverse ecosystems for their subsistence. Rangeland resources encompass more than any other ecosystem in the HKH, and display a diverse assortment of plant communities, wildlife species, and various distinct cultural groups. Rangelands of the HKH are important for a number of reasons:

- They are the headwaters of the principal river systems of the region;
- They provide habitats for numerous wildlife and plant species, many of which are endangered;
- They provide forage for grazing livestock; and
- Many occur within protected areas and are becoming increasingly popular as tourist destinations.

### ***Water Resources***

The HKH are the largest storehouse of fresh water in the lower latitudes and as such are important water towers for nearly 500 million people. They are the source of major river systems: the Indus, the Ganga, the Yarlung-Tsangpo, the Brahmaputra, the Nu-Salween, the Yangtse, and the Mekong. Called the “Third Pole”, they contain the greatest mass of ice and snow outside of the earth’s polar regions. The availability of water at such great heights points, at least theoretically, to significant potential for power generation, irrigation, and flood control through the construction of multipurpose storage dams.



### ***Forest Resources***



Forests cover 24.1 per cent of the total geographic land area of the HKH region. Forest cover varies greatly among the different countries: from a low of three per cent in Afghanistan (with the lowest per capita forest availability of 0.12 hectare) to a high of 58.8 per cent in Bhutan (with a per capita forest availability of 1.9 hectares). These forests are teeming with innumerable varieties of flora and fauna and multitudes of ecosystems.

## **Management of HKH Common Property Resources**

### ***A. Rangeland Management***

Strategies for range management and pastoral development in the HKH should aim to:

- Maintain rangeland productivity;
- Rehabilitate degraded areas;
- Protect and improve biodiversity;
- Promote sustainable livestock production; and

- Improve people's standards of living by stimulating economic growth and increasing employment among the local population.

## Key Issues

The key issues related to the sustainable management and use of rangeland ecosystems in the HKH region include the following:

### 1. *Inadequate understanding of the dynamics of rangeland ecosystems*

Basic knowledge is needed regarding range ecosystem structure and functions in order to assess how an ecosystem will respond to changing management scenarios.

### 2. *Lack of knowledge of traditional pastoral production systems*

Many traditional grazing and livestock management systems are highly evolved and dynamic, incorporating techniques for pasture allocation and access, rotational grazing, and range condition and health indicators designed to maintain range productivity and prevent overgrazing. Development projects must be designed with a proper appreciation of the herders' social and economic values, priorities, and incentives.

### 3. *Rangeland degradation and loss of biodiversity*

A general climatic drying trend is apparently resulting in reduced production on many rangelands of the HKH. In addition, many regions are experiencing rapid social and economic transformations that ultimately affect the number and composition of livestock and associated rangeland use. Without adequate information on how these changes are affecting pastoral societies and the environment that sustains them (wildlife and plant species), these resources cannot be adequately protected.

### 4. *Shortage of forage supplies in winter*

Winter fodder is the key limiting resource in most of the HKH. Thus, the regulation of winter resource access becomes the key to the successful management of rangelands. Many indigenous management systems for common property re-



sources operate by regulating animal numbers based on the number of animals that can be sustained by the supply of winter forage.

#### **5. *Weak institutional capacity and insufficiently trained human resources***

Many of the institutions involved in rangeland management lack a suitable system for gathering, organizing, and analyzing relevant range resource data. Fortunately, there is growing awareness of rangeland resource issues in the HKH, and the need for adequately trained personnel. New perspectives in rangeland resource dynamics, coupled with computer-assisted technology (e.g., Remote Sensing and GIS), can facilitate effective implementation.

#### **6. *Inappropriate policies and development approaches***

The mainstream perspective of many governments is that indigenous rangeland management systems are ineffective. This has led to the uncontrolled exploitation of the grazing resource. Underlying this view is a lack of understanding of the true causes of overgrazing, some of which are:

- Existing range resources are under additional pressure because of government policies to increase agricultural lands in areas generally not suitable for cultivation;
- Elsewhere, agricultural policies undermine the importance of livestock in the mountain farming system;
- Rangelands that have been traditionally managed as a common property resource are now being allocated as private land under some government policies;
- Protected area policies in high-elevation rangelands are usually formulated without proper knowledge of traditional pastoral systems and wildlife habitat; and
- Community forestry policies do not recognize the need for grazing lands in forest ecosystems and generally exclude grazing by both local and transhumant herds within community forests.

### ***B. Integrated Forage Management***

A functional paradigm for HKH rangeland resource management should involve the sustainable use and maintenance of forage resources (native range, forest, pasture, and agricultural lands) that incorporate both scientific and indigenous systems of management, that meet the optimal needs and desires of the household and community (increased livestock and/or crop production, water availability, and forest products), and that do not disrupt the integrity of the ecosystem.

Given this paradigm, policy-makers and donor agencies should take note of the following in developing range development programs:

- Consider the potential for opportunistic range management strategies that are built upon traditional grazing systems rather than on rigid stocking rates;
- Consider the value of participatory planning and strengthening of grazing associations to empower people;
- Promote an integrated approach to incorporate biodiversity issues into the planning process; and
- Promote flexible financing and long-term time frames for livestock and forage development project funding.

### **C. Water Resource Management**

Depending on available resources and local ingenuity and skills, mountain communities have developed diverse strategies for the management of water. Strategies have varied in accordance with local climates, biogeophysical conditions, available technical know-how, and also a consideration of the particular needs for water (household consumption, irrigation, or other uses). These indigenous systems of water management vary widely within the HKH region. Even so, strong community participation and management of such systems are important common features.

Local ingenuity and skills have been applied in the past to store and use water to meet year-round needs and to develop agricultural systems. These should be taken into consideration in the design of water resource management programs.

At the national level, mega-projects for power, irrigation, and flood control were most preferred in the past in many HKH countries. Today, there is a growing and active campaign to shift to small projects, considering the environmental consequences of large projects, the fragile geology and active seismicity of the area, and the costs that are normally beyond the capacities of the countries to bear.

In addition, improvement of the knowledge base on the climate-ecol-



ogy-hydrology of the HKH is vital — particularly in a region where environmental degradation and frequent disasters, such as landslides and floods, are caused by precipitation, both normal and abnormal.

#### **D. Forest Resource Management**

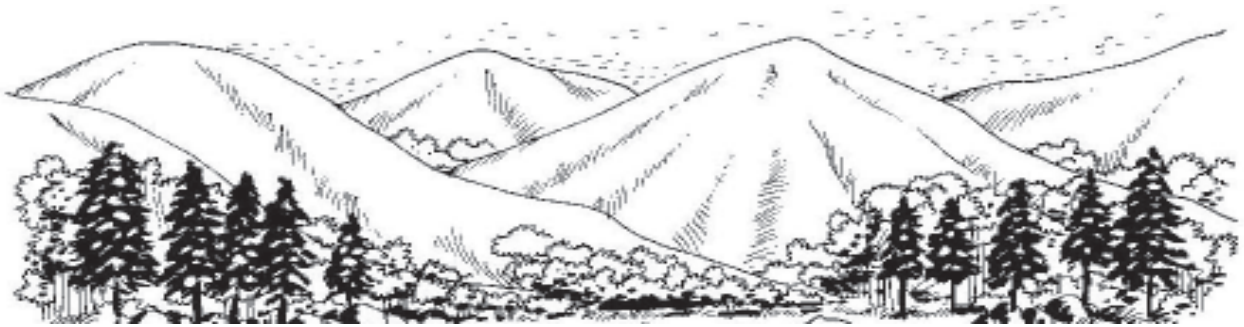
As the world's youngest, highest, and most rugged mountain system, the Himalayas is the scene of constant natural upheavals that are largely beyond human control. However, forest resources are rapidly being lost mainly in two ways: (1) large forest areas are being converted into farm land and settlements, infrastructure facilities, and various development projects; and (2) severe degradation of forest growing stock through continuous and excessive removal of biomass to meet the needs of increasing human and livestock populations. The result is an upset in nature's balancing mechanism and its ability to regenerate.

Other effects of the lack of appropriate forest resource management:

- Lack of legal, administrative, and institutional support for the management of forest resources;
- Breaking down of many well-established traditional, indigenous natural resource management systems without their replacement by new and better ones;
- Confusion, competition, and conflict among rival institutions for control of and authority over resources, thereby preventing integrated, holistic, and scientific approaches;
- Limited resources available for forestry development because the land available for forestry is poor, marginal, degraded, and under excessive pressure;
- Inadequate forestry resource information base, research, and development activities;
- Failure of forest management to reach both accessible and inaccessible areas;
- Failure of forest development programs to recognize indigenous species and their biodiversity, the needs of the local people and the environment; and being guided instead by economic considerations (*e.g.*, industry needs or the ease of planting and tending); and
- Difficulty of effective reforestation (*i.e.*, ensuring that the forest survives and grows to an optimal usable size) due to planting of useless species in accessible areas rather than replacement of useful species in difficult areas where the deforestation is occurring.

The strong complementarity between the common property resources of the mountains and the plains can — with appropriate policy measures and innovative management

approaches, partnerships, and institutional development — help both the uplands and the lowlands guarantee the sustainable use of such resources. Institutions at various levels — local, national and regional — should be carefully designed to reflect the concerns of the many stakeholders involved.



This Resource Book is produced by the Asian NGO Coalition for Agrarian Reform and Rural Development (ANGOC) [angoc@angoc.ngo.ph](mailto:angoc@angoc.ngo.ph) and the International Land Coalition (ILC) [coalition@ifad.org](mailto:coalition@ifad.org).