



## 3.5 Productive landscapes through leasehold forestry in Nepal

KENICHI SHONO, SIMMATHIRI APPANAH, PATRICK B. DURST, YURDI YASMI, GOVINDA KAFLEY, JIM HANCOCK and BRETT SHAPIRO

### Introduction

Community-based leasehold forestry is Nepal's pioneering approach to reverse deforestation and land degradation by involving and benefitting poor communities. The approach began in Nepal about 20 years ago and has two main objectives: regenerating forests on degraded lands; and alleviating rural poverty. Under the system, the Nepalese government leases state-owned degraded forest lands to small groups of poor households. The state requires the households to protect their forest lands against further degradation and allows them to cultivate economically beneficial annual and perennial plants while simultaneously allowing the forests to recover through natural regeneration and selective planting of trees, mostly native species. Leasehold forestry has been highly successful in rehabilitating degraded landscapes while improving the socio-economic status and well-being of poor rural communities in Nepal.



THE LANDSCAPE APPROACH LINKS PRODUCTIVE ASPECTS OF FORESTRY, LIVESTOCK AND AGRICULTURE.

### The people and forests of Nepal

Nepal is a landlocked country in the Himalayas, with a total area of 147,181 km<sup>2</sup> and a wide range in altitude. The country is rich in biodiversity, natural resources are abundant, and various agro-climatic conditions are favourable to developing food and cash crops. However, the physical isolation and rugged terrain of Nepal's hilly and mountainous regions make it difficult to carry out economic activities and deliver services.

Nepal remains one of the poorest and least developed countries in the world. About 83% of its population of 26.6 million people live in rural areas, where household food security and poor nutrition are still major concerns (Government of Nepal 2011a; 2011b). These rural communities are generally landless or have very small landholdings, and are

---

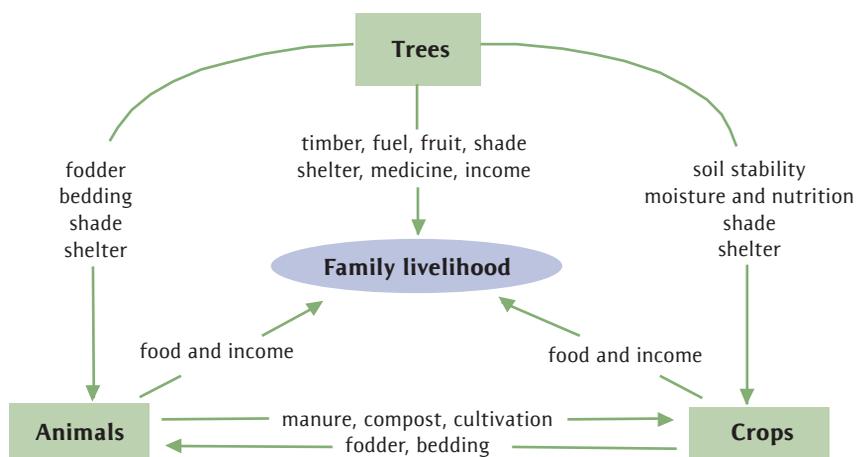
**Kenichi Shono** is Forest Resources Officer; **Simmathiri Appanah** is Climate Change and Bioenergy Consultant; **Patrick B. Durst** is Senior Forestry Officer; and **Yurdi Yasmi** is Forestry Officer (Policy), all with the FAO Regional Office for Asia and the Pacific; **Govinda Kafley** is Team Leader, Technical Assistance to Leasehold Forestry and Livestock Programme, FAO Nepal; **Jim Hancock** is Natural Resources Management Officer, FAO; and **Brett Shapiro** is a consultant, United Nations.

concentrated in specific ethnic, caste and minority groups. The most vulnerable and marginalized groups are the lowest social castes, indigenous peoples and women.

All forests are state-owned; they cover about 25% of the country. Another 13% of Nepal is covered by other wooded lands, including shrubs and bushes (FAO 2010). Forest resources have been declining in Nepal over the past decades, mainly as a result of population growth and demands for energy, fodder, food, etc. Between 1990 and 2010, Nepal lost 24.5% (1,181,000 hectares, or ha) of its forest. During the same period, other wooded lands with less than 10% canopy cover increased by 60.8% (to 717,000 ha). Conversion to agriculture and excessive extraction of resources were the driving factors in deforestation.

Despite degradation and a dwindling resource base, forests remain the basis of rural livelihoods; they provide fodder for livestock, stabilize the soil, furnish suitable agricultural land under their cover, and yield useful non-timber forest products (NTFPs). Figure 1 illustrates the links between forest, livestock and agriculture in the Nepali family farming system.

**Figure 1. Nepal's tree/animal/crop farming system**



Source: Tamraker 2003

### The emergence of leasehold forestry

As forests disappeared, people — especially women — were forced to spend more time collecting fodder and fuelwood, which led to a drop in the supply of agricultural labour and to decreased production and food security (IFAD 2008). Community forestry was introduced in the late 1970s as one way to address these issues; under this approach, state-owned forests were handed over to local communities to manage and utilize. However, as time passed, it became clear that the poorest people within the community were being excluded from community forestry.

To improve the livelihoods of the poorest rural households while halting forest degradation, the Nepalese government launched the Hills Leasehold Forestry and Forage Development Project (HLFFDP) in 1993. The *Forest Act, 2049* (1993) and Forest Rules 1995 provided the legal framework for leasing forest lands to the poor.

HLFFDP was followed by the Leasehold Forestry and Livestock Programme (LFLP) in 2004.<sup>1</sup> The LFLP is being implemented in 22 mid-hill districts of Nepal, where poor communities live in a mixed landscape comprising degraded forest lands, villages and agricultural areas. The overall goal is to achieve a sustained reduction in poverty for 44,300 poor households who have been allocated leasehold forestry plots. The programme has four objectives:

- improve the availability of fodder and tree crops from sustainable management of leasehold plots;
- improve household benefits from small livestock;
- establish viable microfinance institutions to provide services to leaseholders; and
- enhance the government's capacity to implement leasehold forestry as a national poverty reduction programme in a gender-sensitive way.

### How leasehold forestry works

Prospective leasehold forestry user groups (LFUGs) must first undergo a social assessment. Conducted by the District Forestry Office, this assessment determines if they are eligible (households living below the poverty line and owning less than 0.5 ha of land). These groups comprise a small number of households living close to the designated leasehold forest area; cooperatives are formed by aggregating the LFUGs at the village or other level. The government provides up to one ha of state-owned degraded forest land to eligible LFUGs in the form of a lease contract. Leases last for 40 years, with a provision to be extended for another 40.



The lease enables the recipient household to exercise similar legal rights to a private land-owner. The government requires the groups to protect their forest land against degradation from open grazing, forest fires, soil erosion, etc., either for the purpose of enhancing the natural regeneration of trees, shrubs and grass or to cultivate economically beneficial

perennial plants. Open grazing of livestock on the leasehold forestry land must be replaced by stall feeding. Since the land is designated as forest land, only those plants classified as providing NTFPs are allowed to be planted. Leasehold groups are authorized to harvest forest products, except for remnant forest trees (which remain the property of the government), for subsistence use or sale to outsiders. Leaseholders can transfer or sell their rights to others after they have successfully completed one-third of their lease period. District Forestry Offices monitor the implementation of planting and harvesting activities in the leasehold forestry sites.

District forestry and livestock service officials help the LFUGs prepare a group-level forest management plan. LFUG members are also provided with technical advice and training to help them restore the forest on their plots and start income-generating activities. The groups are also provided with basic material, such as seeds, in order to reduce investment costs that they would otherwise not be able to afford.

### Landscape-level agroforestry model

A landscape approach was adopted at the programme sites. The key sources of income and subsistence in the area — livestock, forestry and agriculture — were integrated in a participatory land-use planning process that encompassed both community-owned and privately owned lands (including non-leasehold lands). The process resulted in the preparation of a livelihood improvement plan for each group and household. The plan considered all the resources available to the communities in order to address their present needs and future hopes. The leaseholders were encouraged to be involved in determining the future of their land and in shaping programme activities and outputs. Through this participatory process, stakeholders explored how leasehold forestry could contribute to the restoration of a productive landscape that can provide a wide range of products and services to fulfill the social, economic and environmental requirements of present and future generations.



Many of the degraded leasehold sites were initially planted with *Thysanchoaena maxima* (broom grass) and a number of other fodder species, based on the respective forest management plans; this provided revenue and enhanced fodder availability to improve the livelihoods of poor households in the short term. Community nurseries were also established to propagate various high-value NTFP species such as *Cinnamomum tamala* (Indian bay leaf), *Zanthoxylum armatum* (Nepalese pepper), *Asparagus racemosus*, *Amomum subulatum* (cardamom) and *Edgeworthia gardneri* (Nepalese paperbush) as well as selected timber species, including *Fraxinus floribunda*, *Garuga pinnata*, *Ficus* spp., *Acacia catechu* and the native species *Schima wallichii* and *Castanopsis indica*. These species were either interplanted among the fodder species or planted in untreated degraded sites to provide longer-term income diversification and restore trees to the deforested lands.

Livestock is inherently linked to agriculture and forest management and is an integral part of rural livelihoods in the mid-hill districts. For this reason, livestock was included in the leasehold forestry programme as a fundamental component, through inter-ministerial cooperation between the Department of Forests and the Department of Livestock Services. Recognizing that open grazing of goats had contributed to the degradation of deforested lands and prevented the natural regeneration of native plant species, the programme promoted the planting of forage species, typically covering around 30% of the leasehold plots, which allowed the leaseholders to switch from open grazing to stall

feeding. This provided multiple benefits, including increased availability of manure, reduced pressure on the land (which allowed natural regeneration of native plant species), and more time for women to pursue other productive activities. LFLP, in collaboration with the District Livestock Services Offices, provided additional training and technical assistance in animal husbandry to further improve livestock productivity and income generation.

### Impacts and sustainability of leasehold forestry

FAO, in collaboration with district government officials and LFUG members, has been monitoring the outcomes of leasehold forestry on an annual basis through household surveys. A comprehensive assessment by FAO and partners is underway that will evaluate the programme's socio-economic, ecological and environmental benefits. Analysis of monitoring data to date indicates that combining livestock with forestry has yielded rapid positive results; these are generally not possible with forestry projects that are based on trees.

### Restoration of degraded forest lands

Most leasehold sites were severely degraded before the programme began. Sites commonly had very sparse tree cover and were dominated by invasive weeds such as *Chromolaena odorata* and *Lantana camara*, which prevented the natural regeneration of native plants.

Under the programme, many of the sites were cleared of invasive weeds and planted with broom grass and other fodder species. Average ground cover in new sites before leasehold forestry was about 32%. This rose rapidly to 50% after one full growing season, and gradually increased to almost full coverage in sites after seven years. About 61% of the

LFUGs reported an increase in canopy and ground cover of native and other useful plant species on their leasehold forest land. The increase in vegetation cover has helped reduce soil erosion.



### Social benefits

A total of 7,419 LFUGs (75,021 households) have been formed, which are managing about 42,835 ha of leasehold forests. In addition, the emergence of cooperatives and voluntary groups of several LFUGs has been a significant development. Social mobilization has strengthened links among people, and leasehold

activities made them eager to engage in additional economic activities. The formation of 120 intergroups and 54 multi-purpose cooperatives, involving 1,600 leaseholder groups, allowed savings to be achieved and marketing initiatives to be developed. Group savings is an essential element in each LFUG; it is the means for providing small loans to members. The existence of these groups also brought in grants to build culverts and bridges, improve trails and footpaths, renovate schools, and complete small projects related to the supply of drinking water.

The success of each programme site depended to a great extent on the dynamism and cohesion of these groups. A group assessment conducted by FAO in 2012 analyzed 5,042 groups and found that even among groups that were 15 years old or older, 62% were somewhat or very active, long after programme support had ended (FAO 2012). The key factors that contributed to some of the groups becoming inactive were outmigration; low fertility of the land handed over to them; lack of regular follow-up by the District Forestry Offices; and conflicts within groups. Individual members interviewed during missions were adamant about never relinquishing the user rights that they obtained from their group. This makes it more likely that leasehold forestry will be sustainable.

### *Improved livelihoods*

After five to seven years, programme interventions resulted in a considerable increase in annual household incomes, mostly from the sale of broom grass in the early years, but also from increased livestock production. Participatory assessments conducted in 2006 and 2013 showed that the proportion of the poorest households decreased from 41.4% to 19% between those years in the programme sites. More than 93% of households saved money on a monthly basis, and 77% of the saved amount has been mobilized as soft loans (with a below-market rate of interest) for members.



One of the programme's most significant results was the increase in animal feed, which decreased the average time that women had to spend to collect forest-based fodder. Together with the increased availability of fuelwood inside leasehold sites, households saved up to eight hours per day. This meant that women had more time to pursue other productive activities, such as literacy and vocational training and income-generating activities. Almost half of the new cash earners were women.

An increase in fodder also enabled leaseholders to switch from open grazing to stall feeding. This reduced the pressure on forest land and increased the availability of manure, which can be used to improve soil fertility. The increased availability of fodder and access to credit also allowed a number of poor households to purchase and keep livestock. The average number of goats owned by leasehold forestry households increased from 3.6 at the onset of the programme to 6.12 over a five- to seven-year period.<sup>2</sup> As a result, more livestock products are now sold and consumed in leaseholder communities.

The combination of improved agricultural production and increased livestock has increased food production and improved food security in leaseholder communities. Before the programme, 58.3% of the households had food security for less than three months per year. After the programme, this proportion had fallen to 6.7%, and 11% of households now have sufficient food for the whole year.

### Other social benefits

To assist in the formation and support of groups, 174 female group promoters were recruited under the programme. They proved to be fundamental to creating and sustaining the groups and strengthening women's decision-making. According to a monitoring survey conducted in 2013, women comprised 42% of LFUG executive committee members.



Another important social benefit of LFLP was the clear gains that group members made in confidence and self-esteem. They were far more ready to engage officials in discussions about their needs and problems. In addition to the financial services that cooperatives dispense, they provide training, bargaining power, market information and a forum for decision-making, which women are often a central part of.

Because there was less need for children to herd grazing animals, school attendance also increased among the LFLP households.

### Conclusions

Several key factors contributed to the success of leasehold forestry in Nepal. These lessons could enhance efforts to restore degraded landscapes through pro-poor forestry in other parts of the world:

- Generate short-term income to improve livelihoods, combined with long-term economic benefits and environmental services through the restoration of forest land.
- Focus on the needs of the poorest communities, paying particular attention to avoiding elite capture and ensuring the equitable distribution of benefits.
- Provide secure, long-term tenure with clear rights and responsibilities that are supported by supportive legislation and policies.
- Use a participatory approach through which leaseholders help shape project activities and determine the future of their land.
- Use income generated from the sale of forest products through farmer cooperatives to fund village development and other initiatives.
- Ensure that there is strong inter-ministerial (cross-sectoral) collaboration.
- Take a gender-sensitive approach to strengthen the decision-making role of women by including them in key positions of LFUG executive committees.
- Use the landscape approach, which links productive aspects of forestry, livestock and agriculture, considers the needs and aspirations of present and future generations of local communities, and is based on available resources and livelihood options.

Despite the programme's overall satisfactory performance, several challenges in further scaling up and improving the effectiveness of leasehold forestry have been identified:

- the need to further integrate leasehold forestry (which focuses on the poorest communities and restoration of severely degraded forest lands) and community forestry (which typically includes less degraded forest areas and households that are relatively well-off) so that these complementary programmes can function in a mutually beneficial manner;
- a lack of clarity on the process and rules related to inheritance of the lease from a group member to his or her children; and
- the need to provide incentives for transforming the leasehold site (initially planted with broom grass and other fodder species) to an agroforestry landscape with a significant tree component in order to diversify income sources.

The agroforestry-based leasehold forestry model developed through the LFLP has proved highly successful. The technical assistance it provided has established a solid foundation for scaling up leasehold forestry to bring wider socio-economic changes to poor rural communities in Nepal. Strategic recommendations to the Government of Nepal for further improving and expanding leasehold forestry in the country include: 1) strengthening the capacity of LFUGs to cope with second-generation issues; 2) exploring technological innovations to optimize outputs; and 3) institutionalizing lessons learned in order to scale up successful intervention to other potential areas.

### Endnotes

1. The International Fund for Agricultural Development (IFAD) provided financing to both projects, and the Food and Agriculture Organization of the United Nations (FAO) has provided technical assistance since the beginning, with financing support from the Governments of the Netherlands and Finland.
2. This does not take into account goats that may have been sold in the interim.

### References

- FAO (Food and Agriculture Organization of the United Nations). 2012. Leasehold Forest User Group Categorization: An assessment of the group performance (TA for LFLP, GCP/NEP/062/FIN).
- FAO (Food and Agriculture Organization of the United Nations). 2010. *Global Forest Resources Assessment 2010*. FAO Forestry Paper 163. Rome: FAO.
- Government of Nepal. 2011a. *Nepal Living Standards Survey 2010/11: Statistical Report, Volume Two*. Central Bureau of Statistics, National Planning Commission Secretariat, Government of Nepal.
- Government of Nepal. 2011b. *Preliminary results of 2011 population census*. Central Bureau of Statistics, Government of Nepal, Kathmandu.
- IFAD (International Fund for Agricultural Development). 2008. *Combating poverty through better land and forest use: IFAD's contribution to sustainable forest management*. [www.ifad.org/operations/gef/climate/forest.pdf](http://www.ifad.org/operations/gef/climate/forest.pdf).
- Tamrakar, P.R. 2003. *State of Forest Genetic Resources Conservation and Management in Nepal*. Forest Genetic Resources Working Papers, Working Paper FGR/69E. Forest Resources Development Service, Forest Resources Division. Rome: FAO.