

Impacts of Community Forestry on Livelihoods in the Middle Hills of Nepal

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Abstract

This paper attempts to assess the livelihood impacts of community forestry based on Forest User Groups (FUGs) in the Middle hills of Nepal, using data from the Koshi hills region in the East. The general finding is that impacts are diverse both within and between FUGs, but have been generally positive, in terms of improved levels and security of forest product and benefit flows, various household income-generating opportunities, support for community infrastructure and development activities, and improved 'social capital' for collective planning and action. Nevertheless, impacts to date are below their potential, and the needs of rural households require more investigation to determine what further opportunities exist and how policy and extension agencies may offer specific needs-oriented support.

INTRODUCTION¹

This paper attempts the challenging task of assessing the livelihood impacts of the case-study FUGs. One key question is: impact compared to what? The livelihood impact must be contrasted with the alternative situation if the FUG had not been initiated. Most FUGs were formed to regulate over-extraction, which was causing forest degradation, and so the alternative scenario is likely to have been degradation of the forest resource and consequently heavily reduced product supply. There is also a critical time-based element in this analysis. Degraded forests require some years of restricted use to become productive again, and this typically leads to an interim shortfall for the most forest-dependent households. Furthermore, FUGs have their own pace of institutional development and it may be some years before they are sufficiently cohesive to manage the forest effectively.

This paper begins with introducing a conceptual framework for analysing livelihood impacts and then describes the livelihood patterns of forest users in the Middle hills. It goes on to detail the impact of community forestry on livelihoods, focusing on impacts on poor and marginalized groups. The final section presents conclusions and policy implications.

CONCEPTUAL FRAMEWORK FOR ANALYSIS OF THE LIVELIHOOD IMPACTS OF COMMUNITY FORESTRY

To date there has not been a direct and comprehensive study of livelihood impacts of community forestry across a large number of sites in Nepal, although several studies have been conducted in a modest way, in a small number of sites, in recent years. One helpful quantitative study was conducted by Maharjan (1998), who assessed the distribution of costs and benefits in a single FUG in Dhankuta district. His study highlighted the frequent equity problems of new forest management regimes, which can reduce the access of poorer households to essential forest products. He highlighted the importance of participation of marginalized groups in FUG planning, and also the opportunities for commercialization of forest product collection and processing.

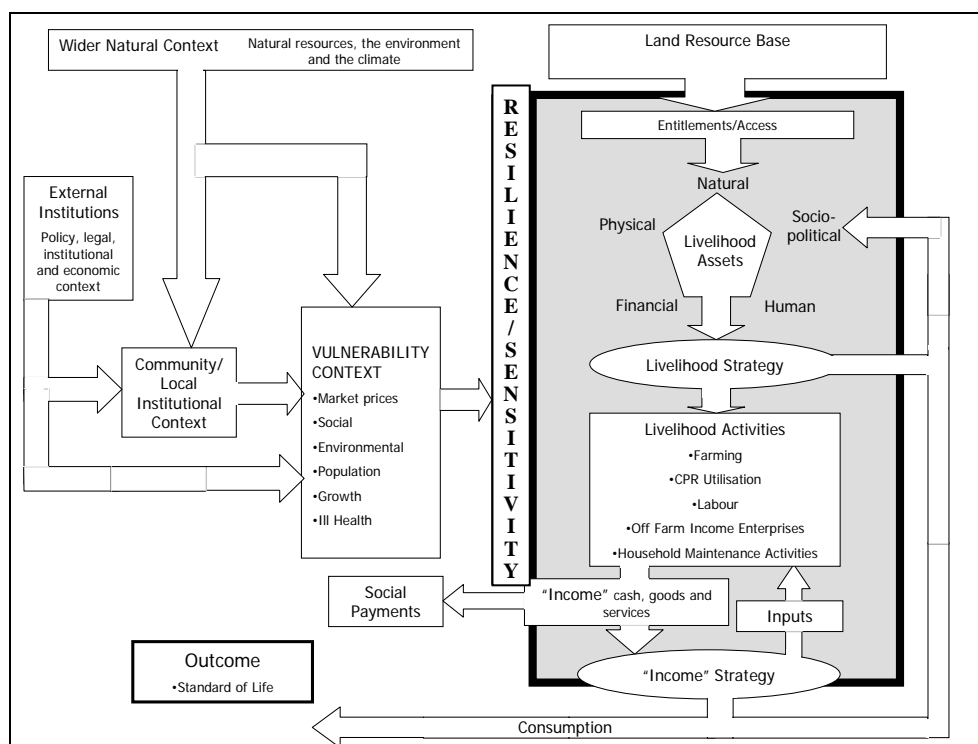
¹ This is the fifth in a series of five papers presenting the findings of a three-year research project (1997-2000) on 'Community Forestry in Nepal: Sustainability and Impacts on Common and Private Property Resource Management'. An overview of the project methodology and study sites is provided in Springate-Baginski et al. (2003).

In order to assess the impact of community forestry on forest users' livelihoods, this study used a livelihood systems model. Carney (1998) presents a definition of livelihoods based on the work of Robert Chambers and Gordon Conway:

“A livelihood comprises the capabilities, assets (including both material and social resources) and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base” (Carney 1998, p. 4).

A number of livelihood systems models have recently emerged that present household livelihood processes and functions. The model used in this paper has been developed by Soussan *et al.* (2001) (see Figure 1). Households build their livelihoods on the basis of their assets and available opportunities. Household 'livelihood assets' are augmented through 'entitlements' to locally available capital, such as tree and forest resources. Different households within the same locale have diverse levels of household assets. The poorest may have to rely simply on their own human capital and entitlement to common property. Households arrive at a 'livelihood strategy' on the basis of assets available, in view of opportunities arising, level of resource access, risk aversion and perceived benefits. On this basis they then engage in 'livelihood activities'. This model gives an understanding of households' livelihood processes, and allows one to 'map' the consequences of specific changes, including changes brought about through external interventions intended to improve people's lives.

Figure 1. Livelihood Systems Model (Soussan *et al.* 2001)



For most households in the Middle hills of Nepal the main livelihood activity is agriculture, usually augmented by cash-earning activities such as a household member going to the plains in search of

work. For households with little or no agricultural land, the main opportunities open are local manual work as agricultural laborers or porters, and artisanal production (with skills and tools passed inter-generationally within households). Collecting forest products can be an important supporting activity for such households, since non-agricultural livelihoods are particularly vulnerable to seasonal fluctuations in demand. Changes in the entitlements / access conditions can vitally affect their livelihoods, as can changes in the condition of resources.

A range of factors in the community forestry context of Nepal can be related to the different components of the livelihood systems model presented in Figure 1. A re-definition of the 'external policy and legal context', through new laws (particularly the 1993 Forest Act and associated 1995 Byelaws) changed the tenure and forest access rights of local communities and created new mandates for the Department of Forests (DoF). There were effective channels for learning from past field implementation of community forestry. There have also been substantial efforts made to re-orient the DoF, which have had some success.

The 'wider social and political environment' has also been of tremendous importance. Early efforts at community forestry were frustrated by social controls imposed by the semi-feudal *panchayat* system. In contrast, there was a rapid growth of community forestry following the 1990 revolution that swept away the *panchayat* system and opened up the possibility of local institutions that were representative and regarded as legitimate by the majority of the population. These political changes also led to a new 'culture' in many government departments, which now saw their role as serving, rather than controlling the people.

The community forestry approach changed the 'local social and institutional context' by creating, as an 'output' of policy, new local institutions (FUGs), and also raising awareness and understanding amongst local people of more democratic decision-making processes and legal rights. FUGs have become pivotal in the empowerment of local communities to manage forests in ways that are seen to be representative of all forest users (in what are often extremely complex local social situations) and provide an effective interface with the DoF. The formation of FUGs is one of the specific targets of the community forestry policy, and the effectiveness of this can be assessed in terms of both quantity (numbers formed; membership; geographical coverage; effectiveness of operations; etc.) and (with more difficulty) quality (participation in, and representativeness of, the committees; gender relations; empowerment in relation to accessing government institutions; etc). The implications of FUGs can go further than forestry management, as many of the more effective and established ones start to become involved in other activities such as schools, water supply and path maintenance. As such, the development implications of community forestry in terms of creating new 'social capital' can go far beyond forests.

Through the FUG, an 'outcome' of community forestry policy is changed 'entitlements and access' of individual households to the forest. The effects of this will vary from household to household, according to existing dependence on the forest, but what the policy does is legitimize existing entitlements and / or create new entitlements to the forest. This can be related to the livelihood model as the 'access to natural capital' element in the diagram. Another 'outcome', due to regulated access, can be an 'improved forest resource base'. Improvements to the forest condition are widely observable under community forestry (Yadav *et al.* 2003).

The 'outcomes' of community forestry policy (legitimizing entitlements, regulating forest access and improvement of forest conditions) can, in turn, lead to 'livelihood impacts': improved flows of forest products available on a sustainable basis. This is more likely to occur if the FUG is egalitarian and effective. However, it is possible that poorer households, who have traditionally relied more heavily on common property resources, will suffer disproportionately in the shorter term, since FUGs often impose heavy restrictions on forest use to allow for the recovery of degraded forest areas. Thus, there

may be trade-offs between the costs of foregoing short-term forest/pasture exploitation, and longer-term gains in sustainable forest production.

Community forestry can open up new livelihood opportunities for FUG members, for example the cultivation of the spice cardamom or the tapping of resin in the forest. In such cases, a critical issue is the distribution of these benefits amongst different groups in the FUG. Thus, the sustainable level of 'income' can be improved, with fewer concerns about gathered forest products and/or more secure livestock production. However, where there is potential for increased cash income through the sale of forest products, the precise modalities of sale and distribution of proceeds will determine how income improves for different social groups. Proceeds may accrue as income to individual households or to the community as a whole, allowing them to invest in local public facilities such as water schemes, nurseries or schools.

All of these factors together may reduce the household's 'vulnerability' to declining availability of forest produce, and long term dangers of land degradation due to watershed destruction. The creation of new local institutions, access to new resources and new patterns of social relations all have implications for the resilience of different households to cope with vulnerabilities (and not just those related to forests).

PATTERNS OF HOUSEHOLD LIVELIHOODS AND FOREST USE

In order to understand the livelihood impacts of community forestry one needs to understand the diverse patterns of social conditions, livelihood activities and forest use specific to each area. Key factors affecting the impact of community forestry on household livelihoods include: (1) the location of specific users in relation to the forest; (2) the ethnic caste background of specific users; and (3) the homogeneity or heterogeneity of the FUG. Given the complex patterns of forest use, the question of how particular changes in forest access have affected users is very challenging to answer. Furthermore, there would have been many changes in local circumstances over the period since the FUG in question was formed.

There is a widespread misconception that forest users are members of one FUG only, and depend on one forest only. Forest users, in fact, commonly depend on different forests, at different altitudes and locations, for different products and services at different times of the year, often complemented by on-farm tree products. This may be most evident in the case of livestock grazing, where settlements at different altitudes can have seasonal reciprocal grazing arrangements. Farmers and craftsmen such as blacksmiths also need fuel wood, fodder, wood for tools and construction timber, each of which may come from different forest areas.

Using the livelihood analysis approach discussed above, we may now consider the livelihoods of different households in the Middle hills, and how community forestry has impacted on them. In order to understand how different groups' positions have been affected, it is important to disaggregate users by: (1) wealth rank, and (2) dependence on the forest resource.

To understand wealth patterns within villages, a wealth ranking exercise was conducted in each FUG. In group discussions, a number of ranks in the village were identified by the local people. Most commonly four ranks (Rich, Medium, Poor, Landless) were identified, although in some FUGs the 'Poor' category was divided into 'Poor' and 'Very Poor' (with 'Very Poor' households having food production sufficient for only three months, and 'Poor' households closer to six months). The criteria for each of the ranks were then identified (e.g. land-holdings, self-sufficiency in food, livestock holding, etc). In each village slightly different criteria were identified, but when these were compared, surprisingly strong commonalities emerged. This has allowed comparisons to be made according to wealth-ranks across all the FUGs studied.

Different wealth-rank groups show different levels of dependence on the forests due to their different livelihood activities and differential access to private resources. Medium, Poor and Landless groups are most dependent on the forest:

(a) **'Rich'** wealth rank households (14% of households across the study sites) have diversified sources of income including secure and well-paid jobs, surplus grain from their own agricultural land, and income from renting out land. They commonly have private resources for supplying tree products. Hence they are much less dependent on forests for product flows, and are mainly interested in forests for construction timber and plough blades.

(b) **'Medium'** rank households (39% of all households) comprise of subsistence farmers, who work on their own farmland. If the family is large they may also rent or share land of rich households, as they usually have a labor force (manual and livestock). They tend to depend on forests for fodder, fuel wood and timber, but have some private tree resources to fall back on.

(c) **'Poor'** households (42% of the total) mostly depend on seasonal agricultural laboring, portering and other skills to supplement food production from their own land. Education levels are low, restricting their income-generating activities. They have little private access to tree products, and so can be particularly dependent on the forest.

(d) **'Landless'** households (5% of the total) have no agricultural land for food production, although in most cases they have a house plot and small courtyard. They live in extreme poverty and depend on manual labor for income.

Poor and Landless households often depend on forests to support market-oriented activities such as fuel wood selling, alcohol-distilling, charcoal for blacksmithing, etc. Their livelihoods are extremely fragile and marginal. They are exposed to low levels of nutrition, poor education, and poor communication within the village and with external agents. They tend to be less involved in the FUG meetings, and suffer social exclusion.

LIVELIHOOD IMPACTS OF COMMUNITY FORESTRY

This section discusses several kinds of impacts of community forestry on livelihoods of local people.

Direct impacts:

1. Changes in the levels and security of forest products and benefit flows (through improvement to the forest resource and / or improved tenure rights).

Wider impacts:

2. Improved 'social capital' for collective planning and action.
3. Support for community infrastructure and development activities.
4. Household livelihood / income generation opportunities (including credit facilities).
5. Improved 'human capital'

The following discussion of impacts is organized on the basis of the livelihood model. The main indicator of impacts is the changed quantity and sustainability of forest product flows. Other indicators used are the household livelihood opportunities emerging through wider FUG community development activity, and improvements in other household and local assets (Table 1). Changes in management of the forest resource have often led to changes in livelihood strategies of individuals and households, which are cumulative and mutually reinforcing. For example, if FUGs have improved forest conditions, local people may be able to collect more fuel wood, and may also require less time to collect it. If they have also been able to raise funds for educational opportunities, then the cumulative outcome may be more time to learn, and therefore better 'empowerment' and ability to earn wages.

Table 1. Indicators of impacts of community forestry on livelihoods: livelihood assets / capital improved?

District:		Dhankuta			Sankhuwasabha			Bhojpur			Terathum	
Forest User Group:		Bhaludhuga	Jalkini	Patle	Ramche	Dharma Devi	Sibhuwa	Ahale	Paluwa	Nakla	Bokre	Helebung
Natural capital	Improving?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Improvement in forest product flows?	No change	Yes (fuel wood, timber)	Yes (fuel wood, grass)	Yes (timber, fuel wood, agric tools, green Sal leaves)	Yes (timber)	Yes (timber)	Yes (fuel wood, leaf-litter)	Yes (fuel wood)	No (forest not opened)	No (forest not opened)	No (restrictions on flows)
	Security / sustainability of product flows?	Yes	Uncertain for some	Yes	Uncertain for some	Yes	Yes	Yes	Yes	Uncertain for some	Yes	Yes
	Other benefit flows from forest?			Jobs from resin tapping								
Physical capital	Improving?	No	No	Yes	Yes	No	Yes	Yes	No	Yes	No	No
	What?		Stretchers	Water supply, community hall, electrification, nursery	Community hall		Water supply, school	Monastery, trail, nursery		Health post		
Human capital	Improving?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes
	Training	Yes	Yes	Yes	Yes	Yes	Yes	Yes			Yes	Yes
	Animator			Yes	Yes							
'Social capital'	Improving?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Financial capital	Improving?	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	Yes
	Funds to support:		Student	Youth club, health	Employment, household loans	Household loans	School	Household loans				

A. Improved and More Sustainable Forest Product Flows

Improved and more sustainable forest product flows are due to the improved condition of the forest resource ('natural capital'), and changed entitlements to use it. The legal reform of forest management has improved community entitlements to forest resources, and their ability to influence its management.

The forest resource

In all the FUGs studied the forest resource is improving. This has been achieved through diligent protection of forests from forest fire, illegal tree felling and unregulated extraction of forest products. There have also been plantations on barren land. Efforts of the FUGs to resolve land disputes with individuals and neighboring FUGs are limiting the extent of forest encroachment. Although some forests have full stocks of natural stands, a general lack of appropriate silvicultural operations (e.g. rotational thinning and pruning) means that users are not reaping the full potential benefits (Yadav *et al.* 2003).

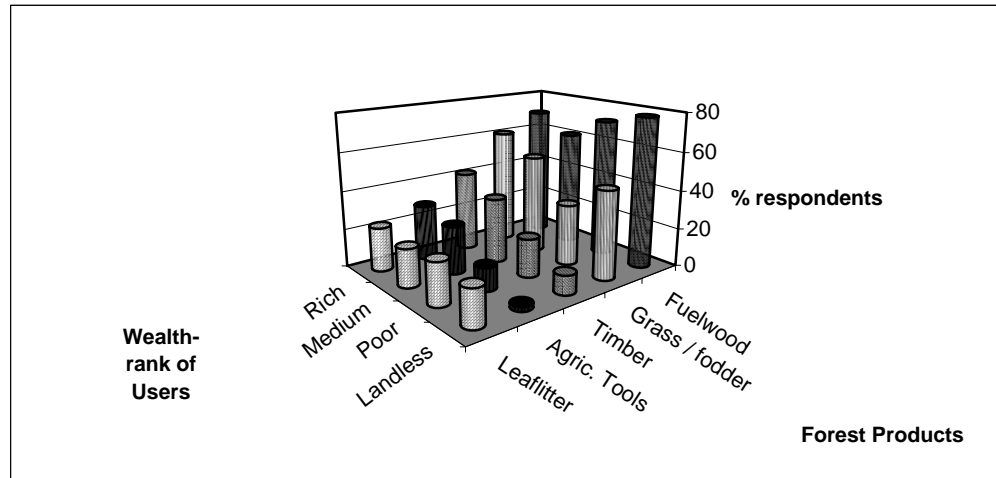
Improving the forest resource has not been without costs. Controlling extraction and grazing implies that forest users have sometimes had to reduce their use. Users who are most dependent on the forest can feel at odds with the FUG, especially in the initial stages when restrictions are often most stringent. Fuel wood sellers in particular have complained bitterly of the restrictions on collection of fuel wood, and many have ignored the regulations. However, it is apparent that their needs have been accommodated to some extent, since their transgressions of rules have often been tolerated by the FUG. They are also most likely to benefit from improved forest conditions after the transition period. However, whether they do in fact benefit depends on the product distribution regime.

The improvement of the forest resource has a number of intangible benefits such as tree cover and improved hydrological regime, which all users generally enjoy. Tangible forest product flows have increased in seven of the 11 FUGs studied. Figure 2 gives an idea of the types of products received by members of FUG in different wealth groups. Flows of products suitable for soil nutrient management (e.g. leaf litter for compost making) have generally improved. However, with little deliberate strategy for active management to increase the flow of these products, the improvements are well below the potential.

Figure 2 shows that, for fuelwood, the highest proportion of recipient households is from the landless wealth rank, i.e. those with least access to private resources. For timber, on the other hand, the highest proportion of recipient households is in the rich wealth rank. Although the overall proportion is low, this nevertheless reflects the generally poor equity in timber distribution practices. In most of the FUGs, entitlement to collect forest products is based on the payment of a flat-rate fee. When the prices are nominal, wealth rank makes little difference to the distribution of benefits. Fees for timber are, however, usually high enough to discriminate against poorer users, who are obliged to use cheaper poles for house construction instead.

The similarly skewed distribution of agricultural tools is to be expected, and reflects the need of landholders for plough sets.

Figure 2. Percentage of users of different wealth ranks receiving different forest products (N=244)



In almost all FUGs studied the majority of users are satisfied that forest use is now sustainable, both for everyday products as well as long-term needs such as construction timber. In a small number of the FUGs there is concern regarding over-extraction of specific products, and measures are being taken to control this. For example, the wasteful practice of cutting a *Sal* tree for a few plough blades and then leaving the rest of the tree to decay is being countered by some FUGs by allocating one tree to be used between 4-5 users.

B. Improved 'Social Capital'

FUGs create a new social forum, with the potential for local-level development planning, improved social support structures and social cohesion. In livelihood context this is often labeled as 'social capital'. Whilst the term itself is acknowledged to be highly problematic in its implied economic reductionism and instrumentalism, here it is found to be a useful shorthand for social conditions such as networks and institutions which are available to households for collective action.

The benefits of the creation of 'social capital' depend upon the participation of households and individuals in local institutions, and enhanced knowledge of rights and duties involved in securing a livelihood. There may also be improvements in networks and contacts necessary to access financial capital (i.e. through borrowing).

The impact of apparently improved social capital is very difficult to assess as there is a crucial distinction between the form (e.g. the FUG institution) and the content (e.g. the level of household engagement), but one approach is to think of the overall framework of social networks and relationships as the overall 'stock' of social capital, with different households able to access different parts of this stock dependent upon their 'social entitlements' (which in turn will reflect, and depend on, social group, kinship, religious affiliations, political links, and any other factors that go to make up social networks).

In all the FUGs studied, even the poorly institutionalized ones, the researchers were able to conclude from institutional assessment that the FUG generally did represent new and genuine social capital for most if not all member households. FUGs are new local institutions that provide a forum for community decision-making. Some are going beyond forest management and becoming institutions for *tole* (hamlet)-level development planning including direct Village Development Committee (VDC) and District Development Committee (DDC) planning based on local priorities, and

empowering local communities to demand the appropriate services from local government line agencies.

The emerging pattern indicates that in the smaller FUGs cohesion is strong across the whole FUG, but in the larger FUGs social cohesion mainly develops within *toles*, and so FUG meetings must be carefully facilitated by *tole* representatives. Since most of the FUGs are large (in terms of forest size and number of households), the latter situation is more common. The development of social capital, through which local *toles* can come together to plan their own development, is one of the strongest opportunities for the community forestry process in the Middle hills. The micro-level planning process, described in Dev *et al.* (2003), is one proven approach to developing the social capital of FUGs.

At the local level, a number of indicators suggest that the institutional capacity of the FUGs is generally good (the number of new institutions created, membership numbers, meeting attendance, measures of participatory activity, qualitative information from focus groups upon politics of agenda setting, and management and performance criteria). At DoF level, interviews of key personnel in different parts of the administration (from First Secretary to Forest Ranger) suggest that a process of capacity building is continuing in earnest, both through new formal procedures as well as informal practice.

It is very difficult to make generalizations about the distribution of benefits from new 'social capital'. In some ways, perhaps the elites have benefited more than middle ranking or poor households so far. However, this is not amenable to direct measurement and so remains a somewhat abstract debate. What is certain is that promoting more inclusive democratic and equitable decision-making structures will give proportionally greater benefit to poorer households.

C. Improved Community Infrastructure ('physical capital')

FUG community development activities have led to improved village level infrastructure (physical capital) in the majority of FUGs studied. The main examples are as follows:

- Trail making
- Drinking water supply
- Support to schools in the form of teachers' salaries, fund and timber contribution for constructing school building (i.e. developing 'Human Capital')
- Construction of community halls / agricultural group halls supported by donation of construction materials and funds.
- Contributions for construction of temple and monastery.
- Village electrification.
- Extension of Forest; Dharma Devi FUG is in the unusual position of planning to buy land to create a new forest; from its own sources it has raised NRs.31, 000 (US\$ 400) in order to buy 10 *ropani* (0.5 ha) of land.

Most of these have benefited all wealth ranks equally. However, in some of the FUGs the improvement of school facilities has been of greater benefit to rich members, and less benefit to poor households who can't afford to send their children to school as they are needed to look after animals. Often such activities are known to District Forest Office (DFO) staff but remain unsupported, as DFO staff primarily address forest-related matters.

D. Improved Credit Opportunities ('financial capital')

The provision of financial capital (the establishment of credit and micro credit schemes) can be a significant 'outcome' of community forestry, and if so its availability to households, and its uptake, can then be an 'impact'. All FUGs studied have some accumulated funds, although whilst some have

generated a significant amount, others have increased their funds only slightly since formation. Funds in remote FUGs tend to be small. The generation of larger funds (i.e. over NRs.10,000 or US\$130) generally depends on having marketable forest products and a nearby market (e.g. for sales of resin, timber or nursery seedlings). Groups without this advantage depend on 'passive' fund raising: for instance imposing small levies on FUG members.

Beyond forest management costs, most of the FUGs use their funds to improve community infrastructure as discussed above. Some have also given support to the sick. Relatively few case-study FUGs have moved towards mobilizing their funds for micro-credit although the organization of savings and credit groups has played an important role in household livelihoods wherever this has occurred. This practice is certain to increase due to the high demand from users, particularly poorer ones. FUG support for improved household income generation is seen as a priority issue amongst forest users – it was cited as an indicator in nine of 11 FUGs.

The FUGs are often uncertain how much freedom they have to decide on how to spend their funds. They need to be unambiguously informed by *Range-Post* staff that they can engage in all aspects of community development as they see fit, and that they may mobilize their funds to this end. There exists great potential for FUGs to mobilize their funds for micro credit. A recent study by a micro-credit support agency in Nepal found that 'FUGs were remarkably strong community-based organizations, with good leadership, management skills and systems, and loyal members' (Anon 1999) and with all the institutional requirements for providing savings and credit services. The main concern of the study was uncertainty within FUGs over whether they considered micro-credit activities to be a priority. In all of the FUGs in the present project, most users, and particularly poorer members, felt micro-credit was a priority need. They often had difficulty getting loans without collateral, and small loans to start income generation activities such as pig-rearing were seen as the most desirable uses of the FUG fund. However, the committee members in many FUGs were hesitant about micro-credit as they were unsure how to administer it, did not fully trust the users to repay the loan, and in some cases saw it as direct competition to their own money lending service! Since FUG committees tend to be dominated by wealthier people, they have a lower motivation to launch the initiative, although this can be counteracted with awareness-raising support: four of the 11 FUGs studied had embarked on micro-credit loan schemes for the poor.

E. Improved Human Capital

The development of human capital improves the capabilities of individuals to secure their well-being. The effects of developing human capital can be cumulative and multiplicative. For example, it can create new organizing roles for women on committees to oversee savings groups. Human capital can be developed by freeing up time through the provision of accessible drinking water or labor-saving agricultural technologies, for example. More free time allows disadvantaged groups to spend time on the accumulation of skills (e.g. literacy), knowledge (e.g. through the radio) and personal/institutional networks. Community forestry has contributed to improving 'human capital' in various ways. Training provided by the DFO has improved the skills of some of the FUG members (e.g. in record-keeping), although this has proved to be of limited benefit. In two FUGs, the Nepal UK Community Forestry Project (NUKCFP) was providing training to female 'animators' (or local facilitators), which had had a significant impact in increasing women's awareness, social role, confidence and empowerment.

F. Increased Household Livelihood Opportunities

This is one of the most obvious and measurable impacts of community forestry upon livelihoods. Indicators must address issues of wealth, gender and age. Impacts can be traced to the direct provision of new income opportunities, the enhancement of human and financial capital, and possibly in the pay-offs of each activity. The case study FUGs have promoted a number of income-generating

livelihood opportunities. For example, four FUGs have been able to provide some jobs for poorer households, such as resin tapping and forest guarding.

There are five main areas in which FUGs can support household income generation:

- Focused support for poor households to change from fuel wood selling to more sustainable activities;
- Skill-development training;
- Co-ordinating livelihood support activities of different external agencies;
- Creating employment through active forest management and engaging in marketing activities as an enterprise;
- Mobilizing FUG funds for micro-credit – particularly for small enterprise development

The potential for income generation opportunities is hardly being exploited by the case-study FUGs. There exist a range of opportunities, particularly for forest product collection and processing, which few of the FUGs have so far explored.

Most of the FUGs discourage fuel wood selling, and fuel wood sellers are generally keen to change to less laborious, more unremunerative and socially acceptable income generation activities (even though current levels of fuelwood extraction for sale are often sustainable in many areas). However, only some of the FUGs provide support to fuelwood sellers to change their occupation. In Paluwa Pikhuwa many former fuel wood sellers complain that they changed their occupation with no support from the FUG. About 15 families continue to sell fuel wood. In Ramche FUG on the other hand, fuel wood selling has been 'normalized' through fuelwood sellers being accorded status and higher extraction. As the capacity of the forest to supply fuel wood was high, extraction has been brought to sustainable levels by the FUG's quota system. Other agencies are also working in the FUGs to help improve the livelihoods of poorer FUG members. For example, in Paluwa Pikhuwa FUG, the Women Development Office has supported small-scale livestock raising, which has been successful for about 40 households. The FUGs are not yet supporting these sorts of training programs, but could easily coordinate these activities at the local level. Another potential income-generating activity is sale of timber but there remains uncertainty about FUGs' rights to do so (Box 1).

Box 1. Can FUGs sell timber?

Near bazaars (large markets), timber-merchants are an important group of users. As more Middle hills forests are handed over to FUGs, which are successfully regulating timber felling and stopping illicit timber smuggling, there are increasing problems of supply of construction timber for district centers. FUGs could themselves fulfill this demand in a regulated way, but so far the DoF has generally objected to FUGs trading in timber due to a few incidents of over-felling. In some cases it appears that the supply problem is being circumvented by some DFOs who want to avoid the transfer of some timber-yielding forests to FUGs, yet some observers suggest they instead want to give felling contracts to local contractors or at least turn a blind eye to illicit felling. The clearest example of this is Heluwa Besi, where timber demand in bazaars is being met by illicit felling. This method of supply means that non-FUG forests near bazaars are facing increased and unregulated extraction and are consequently deteriorating.

G. Vulnerability

Vulnerability is a hypothetical and probability-related concept (Blaikie *et al.* 1994) and is an integral part of a livelihoods framework. Vulnerable households have to have some 'insurance strategy' in order to face risks (e.g. poor rains, illness, earthquake) and this can reduce the time or capital available to allocate to their productive activities. Households face multiple layers of vulnerability: the effects of some vulnerabilities (especially of 'trends' such as long term weather patterns) are easier to assess, but others (such as abrupt natural disasters like landslides) cannot be directly verified

until they actually occur. The ability to recover from shocks is an important element in assessing vulnerability. In many ways vulnerability is as much a matter of perception for the households concerned as it is about actual impacts.

Perhaps the greatest effect of community forestry on the vulnerability context has been to reverse the threat of a loss of forest product supplies. In the FUGs where users have been highly dependent on the forest for daily fuel wood supplies, this has been a great improvement to their day-to-day lives as well as reducing their longer-term vulnerability. Although there has been a marked increase in on-farm trees, which may be partly attributable to the declining security of forest product flows prior to community forestry, this is not an option for the poorest with little private land. From this perspective, therefore, it is the vulnerability context of the poorest that has been most improved.

IMPACTS OF COMMUNITY FORESTRY ON THE POOR

Concerns have been raised by observers as to whether some groups' livelihoods have suffered under the community forestry regime. There are three main areas of concern.

Firstly, have some genuine users been excluded from membership of FUGs? This was found to be the case in only one of the 11 FUGs studied, and the group in question (blacksmiths) were negotiating to change this (and furthermore they had alternative sources for their forest requirements). Issues of marginalization (rather than outright exclusion) were also of concern for some members in two other FUGs, although here also members were in negotiation.

Secondly there are concerns about whether forest use restrictions disproportionately affect poorer groups who are most dependent on forests for their livelihoods. The 'cost' of restraint on forest use can also be borne disproportionately within households, due to different task responsibilities (e.g. women bear the burden of collecting fuel wood from further away). In this study it was found that whilst in some FUGs poorer households had suffered from restrictions, particularly on fuel wood collection for sale, the restrictions had usually not been strongly enforced, acting more as a mild disincentive rather than a ban. Indeed the opposite was sometimes the case: one FUG had introduced an 'equity'-based product distribution system and made specific provisions to allocate more fuelwood to poorer households (with less private resources of their own to fall back on).

The third important issue is whether local decision-making excludes the interests of the poor and marginal. For example, indebtedness to moneylenders within the village can compromise poor people's ability to negotiate in FUG meetings. Genuinely inclusive decision-making exists only in a minority of the case-study FUGs, and the consequences vary between the FUGs. Discrimination against poor groups can take the form of fixing excessively high membership levies and royalty charges for forest products, or the mobilization of FUG funds to cater to the priorities of the wealthier members. Poorer groups' experiences have generally been that they have had a low level of influence on FUG committee decision-making, and have often had their interests neglected.

The key to addressing these concerns is the need for inclusive decision-making based on *tole*-level interaction. Field support staff are needed to educate FUGs in improved planning and decision-making practices.

CONCLUSIONS AND POLICY IMPLICATIONS

The impacts of community forestry have been diverse across and within the FUGs studied. One of the most significant achievements has been that the widely anticipated problem of serious forest product shortage has largely been averted. Most forest users express relief that the degradation of the forest has reversed, and that benefit flows are now more or less sustainable. In some cases there has been an overall increase in benefit flows, in some of the FUGs product flows have stabilized, and in some cases been slightly reduced, to ensure sustainable flows in the future.

In some cases the needs of poorer groups have been neglected, and this issue is perhaps the 'acid test' for the livelihood impacts of community forestry. However it would be mistaken to exaggerate the difficulties, or generalize from specific problem cases. Our experiences indicate that many of the FUGs have sought to accommodate and, increasingly, specifically support the particular livelihood needs of poorer households. 'Secondary' effects on livelihoods have also emerged due to the wider activities in many of the FUGs; for instance employment opportunities, credit facilities, infrastructure improvement, etc.

As community forestry in Nepal shifts from the initiation phase, concerned primarily with forming FUGs, to a consolidation or '2nd generation' phase, it is increasingly being driven by the needs of the communities themselves rather than only by government policy makers and implementing agencies. As such this new phase may well be considered 'livelihood forestry'. Communities are no longer solely occupied with passively conserving forests in return for modest flows of subsistence forest products. Instead they are moving towards dynamic mobilization of forest resources for their wider livelihood development, as well as using the collective action forum of the FUG for wider development planning. In order to realize the potential of livelihood forestry, a more systematic FUG-level planning process is required; to assess the actual needs of rural households, the productive potentials of the forest resource, and to choose between alternative opportunities on an inclusive and equitable basis. A further FUG information need is to understand the range of support available for livelihood development activities. The micro-level action planning process proposed in Dev *et al.* (2003) is one proven approach to developing the social capital of FUGs to plan their own livelihood development.

There remain many more opportunities for augmenting rural livelihoods and equity through FUGs, such as developing forest product processing and marketing, developing livelihood skills, providing micro-credit, promoting empowerment of marginal groups, etc. The DoF has yet to re-orient itself to this new direction. Currently, policy emphasizes the protection and regeneration of forests, but is unfocussed regarding direct enhancement of livelihoods. There are no specific provisions regarding poverty alleviation, and although there are provisions for promoting gender equity (e.g. it is proposed that 50% of FUGs should be comprised of women), in practice this appears to be poorly implemented due to a lack of awareness or monitoring.

The greatest constraint on most FUGs adopting community forestry for livelihood is the prevalent perception that the FUG, as a body initiated by the DoF, should restrict its activities to conservation-oriented forest management. Awareness-raising regarding the great potential for an expanded FUG role in livelihood development is needed. Support is needed to educate FUGs in improved planning and decision-making practices, including facilitating inclusive decision-making to address concerns of inequity.

One area with particular potential, which remains only partly developed, is mobilization of FUG funds. Although 75% of FUG income can legally be allocated for non-forestry work, there was poor awareness within the case-study FUGs about how to mobilize their (often substantial) funds, and how much freedom they have to do so. They must be unambiguously informed by *Range-Post* staff that they can mobilize their funds to engage in all aspects of community development as they see fit. Outside technical support is needed to introduce knowledge of methods and raise the confidence of FUG committees to initiate micro-credit schemes.

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