
Community-based Conservation

Is it More Effective, Efficient, and Sustainable?

RESOURCE MANAGEMENT



ECONOMIC COSTS & BENEFITS



SOCIAL & COMMUNITY IMPACTS



BIODIVERSITY CONSERVATION



SUSTAINABILITY ANALYSIS

Summary of Scientific Evidence Relating to Community-based Conservation

Submitted to:

The Gordon and Betty Moore Foundation

Submitted by:

Future Generations Graduate School of
Applied Community Change and Conservation

March 2008

A certified forest area in Nepal. Photo by: Asia Network for Sustainable Agriculture and Bioresources



NEPAL CASE STUDY

Community-Based Forestry in Nepal^{*}

Community forestry has rightly been credited with the re-greening of the hills of Nepal.

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Context

Nepal has witnessed a trend of deforestation throughout its history, as forest lands have been converted to crop lands. The country was unified in the late 18th century by the Gorkha King Prithi Narayan Shah, who encouraged the conversion of hill forests to agricultural lands as a way to increase the taxable land base. This policy of encouraging land conversion to agriculture continued through the end of the Rana regime in 1951. By this time most of the land suitable for agriculture production in the hills of Nepal had been deforested (Ives and Messerli 1989). One-third of the total forest and cultivated lands of the country, primarily in the Terai region, were under *birta*¹ tenure with 75 percent of that area belonging to the Rana family (Regmi 1978).

The 1950s saw a period of democratic rule in Nepal, under the socialist-leaning Nepal Congress party. To reverse the *birta* land monopoly, all forest lands were nationalized in 1956, followed by the establishment of a nascent forestry bureaucracy charged with managing forest resources. Malaria eradication in the southern Terai zone, accompanied by a government sponsored resettlement program in the Terai, initiated a period of massive deforestation in this fertile and easily cultivated region. The nationalization of forest lands also led to a “tragedy of the commons” scenario where, in the absence of government control, forests were rapidly exploited.

By the 1970s there was a growing international concern over the rate of deforestation in Nepal. A theory developed linking deforestation in Nepal to the increased severity of floods in Bangladesh (Eckholm 1976).² A 1980 World Bank document estimated that at the rate of deforestation occurring at that time, all accessible hill forests would be gone within 15 years and that the Terai would be treeless within 25 years (Gilmour et al. 1989). The villain in the story behind these dire predictions was the ignorant Nepali hill farmer, who was having too many babies and spending his or her days mercilessly whacking the neighboring trees. These predictions led to an infusion of international aid to save the forests of Nepal.

By the mid-1970s the forestry establishment, with significant nudging from the donor community, began to realize that the top down approach to the deforestation problem was not working. There were too many small forest

¹ *Birta* was a feudal land tenure system, under which land grants were made by the state to individuals on a tax free and heritable basis.

² In the mid-1980s, work by Ives and Messerli (1989) and Hamilton (1985, 1987) began to re-evaluate the theory of Himalayan degradation, recognizing the role of natural mountain geologic processes. However, a theory once accepted is hard to kill.

patches in the hills of Nepal for the Department of Forests (DOF) of the Government of Nepal (GON) to control. There were too many hectares to reforest and too many “ignorant” villagers to convince not to cut trees on government land. In 1975, a key conference was convened by the Department of Forests in Kathmandu to discuss the state of Nepal’s forests. The conference remained convened for an incredible 23 days, as participants hammered out a new vision for the forests of Nepal. The result was a national forestry plan, published in 1976, that redirected attention from the valuable timberlands of the Terai to Nepal’s hill forests, and recognized the need to involve local communities in the management of nearby forest resources (Gilmour et al. 1989; Hobley 1996). Following up on this activity, the Department of Forests, working with the donor community, developed a 21-year Forestry Sector Master Plan, addressing an array of needs to move toward a comprehensive community forestry program (Government of Nepal 1989).

Participatory Resource Management System

It took 20 years of experimentation to begin to get the necessary social organization and resource management systems in place. Initially, control of forest resources rested with the local “Panchayat” government. It took the change of control from local government to recognized community forest user groups (CFUGs, composed of those communities who are traditional users of a patch of forest), the 1990 return to multiparty democracy bringing a degree of administrative accountability, and the enactment of Nepal’s new Forest Act (1993) and forest regulating bylaws (1995) for the community forestry program to begin to go to scale (Sowers et al. 1994; Kanel and Niraula 2004).

Table 1

Fiscal Year	Number of CFUGs*	Community Forest Area (Hectares)	Households
Prior to 1984	99	5 982.74	10 440
84/85	1	15.50	53
87/88	1	27.00	35
88/89	10	567.96	1 115
89/90	42	1 972.57	4 492
90/91	87	5 011.53	12 973
91/92	339	20 759.90	34 952
92/93	729	51 585.12	80 180

93/94	1 204	87 692.80	131 809
94/95	1 645	119 775.60	178 499
95/96	1 743	155 862.58	194 404
96/97	1 586	132 634.29	180 337
97/98	1 438	135 886.15	168 504
98/99	1 157	99 065.79	135 090
99/00	1 079	93 678.22	123 528
00/01	855	89 960.83	98 591
01/02	644	57 347.12	91 333
02/03	600	44 715.93	70 359
03/04	577	42 863.06	69 844
04/05	400	40 103.56	49 800
05/06	10	1 118.01	1 144
06/07	91	32 645.74	10 235

*Community forest user groups. Source: Department of Forests, November 2007

Table 1 shows the annual progress in the establishment of new forest user groups and the handover of management responsibility. The 2001 slowdown in establishment of new groups was due to the Maoist insurrection and limits on the administrative capacity of the Forestry Division (Rechlin et al. 2007). At present there are 14,337 community forest user groups in Nepal, managing 1,219,272 hectares of forest lands. The program has national significance; one out of every three Nepali citizens is a member of a forest user group.

The community forestry system calls for the facilitators³ to identify eligible members of a forest user group and delineate the forest patch to be handed over to the group. Once established, the user group works with the facilitator to draw up a constitution for their group and a management plan for their patch. The group is free to determine its priority needs and how it will protect the forest. Users manage their forest for fuelwood, fodder, grass, fallen leaves, poles for house construction, and new or enrichment plantings.

³ The persons with the skills and knowledge to facilitate the community forestry process. They can be a midlevel technician of the Department of Forests or an NGO employee.

They place restrictions on use to guarantee the sustainability of the resource base and devise a scheme to protect the forest from illegal use by village members or outsiders. The user group also maintains a common fund with a bank account, and elects an executive committee with the responsibility of implementing their constitution and plan. Once these are in place the district forest officer formally hands over the delineated forest to be managed by the plan agreed on by the user group. Plans cover up to a 10-year period, and failure to abide by the plan can result in the department again taking control of the community forest (Government of Nepal 1993, 1995; Department of Forests 2001).

Social Costs and Benefits

Forest user groups are new social institutions in village Nepal. Traditional social institutions in rural Nepal are often caste bound and exclude women from decision-making outside of the home. Forest user groups were conceptually developed as egalitarian organizations, where all forest users, regardless of caste, gender, or economic status, would have an equal say in the decision-making process. Elected members of the user group's executive committee are to represent all settlements included in the community forest, as well as women, caste groups, and members of disadvantaged community groups (Department of Forests 2001). Implementation, however, often runs up against village societal norms and accepted practices. For many disadvantaged, uneducated, or impoverished groups, low self-esteem also hinders their full participation in the program.



Women participating in the community forestry planning process in Nepal.

Photo by: ANSAB

As a new social innovation, and one with defined rules of inclusion, early evaluations found that CFUGs were shaking up traditional societies. With a guaranteed seat at the table, women were being elected to community forestry executive committees and serving as chairpersons of those committees. This process helped to increase women's participation in community forestry significantly (Subedi 2006). Of 14,337 established CFUGs, 784 groups are headed by women. Often a CFUG would build a local office where informal literacy classes were being held and where "caste was left at the door" (Sowers et al. 1994). A study of community-defined indicators of success (Pokharel and Suvedi 2007) listed women's participation in CFUG operations as one of eight key indicators.

The social benefits of community forestry, however, including livelihood enhancement and democratic governance, have not reached their full potential. Second-generation issues or challenges, including post-formation support, equity in decision-making, benefit sharing, and determining potential commercial uses for the forest have emerged (Gilmour 2002). Select stakeholders, mainly the elite and powerful, have come to dominate decision-making in many CFUGs. A study on access to power through the narratives of 38 forest users (Lachapelle et al. 2004) found the crosscutting themes of inferiority, vulnerability, and lack of transparency to be hindering social inclusiveness in CFUG operations. Those narratives included quotes such as:

The blacksmiths belong within the illiterate, lower caste. They don't know the benefit and what the forest provides for us.

The people from the lower caste don't know what and how to speak in a crowd.

I alone cannot go (to the meeting). If this is the tradition of the village and I go alone, then people will start to talk.

These second-generation issues are being dealt with through refocusing community forestry goals on livelihood enhancement. Pro poor and inclusive processes have been developed for use in the community forestry program. One of these involves working with communities to develop a livelihood enhancement plan as part of the forest management plan review process (Joshi et al. 2006). As opposed to the prescriptive approach now taken, this new process embraces an adaptive management approach to planning and recognizes that the social setting in each village or community is unique, requiring an individualized response.

Economic Costs and Benefits

Dev et al. (2003), in a study on the impacts of community forestry on the livelihoods of people in the mid-hills of Nepal, put the potential benefits in the following categories:

- Improved and increased sustainable flow of forest products
- Improved social capital
- Improved community infrastructure or physical capital
- Improved human capital
- Improved livelihood opportunities.

This economic analysis will follow that pattern, using Dev's categories.

Sustainable flow of forest products

Community forestry invariably starts with a period of forest protection, allowing for regrowth, which is followed by a management strategy that limits harvest to prevent degradation of the biological resource base. This results in an improved condition of the forest, resulting in sustainable harvest at a higher rate (Yadav et al. 2003). In his study, Dev (2003) found that almost all users recognized that the forest was now more sustainable in providing for their everyday needs.

A study by Jaiswal et al. (1994) showed conclusively that growing trees in Nepal was a good economic investment. Using an agro-forestry plantation established in 1983 and harvested seven years later, they showed that the present net value of the products sold far outpaced the value of the agricultural products that could have been grown on that piece of land.

Forester (1995), as part of a financial analysis of the proposed USAID funded Environment and Forest Enterprise Program, conducted a financial analysis of enhanced product availability due to community management of forests in the Rapti development zone. He found that the protection and management of trees afforded under the community forestry program would increase the total present net worth of the forest area in the zone by \$39 million, equating to an income of 713,900 rupees per year (1996 conversion rate) on an average 100-hectare community forest. In addition to timber values, protection and management of the lands results in increases in fodder and in agricultural production due to increased leaf fall for composting. He estimated that increased milk production related to fodder and increased corn production related to fertility would add another \$130,000 per year to the value imparted by the proposed programs under the Environment and Forest Enterprise Project.

Fox (1993) compared forest condition and management in Bhogteni village in 1980 to that in 1990. He found that, as an early participant in the community forestry program, Bhogteni had increased its fuelwood supply from 370,000 kg/year in 1980 to 800,000 kg/year in 1990. Yadav and Branney (1999) found that stem count per hectare in the community forest of four Koshi hill districts was increasing significantly, 51 percent, between

1994 and 1997.

Improved social capital

As new and inclusive social institutions, CFUGs are providing a new forum for planning development and promoting social cohesion. Their creation has helped build capacity at the local level for managing finances and working with government officials. This capacity building has extended to the regional and national level with the creation of a formal network. This network, the Federation of Community Forestry Users Nepal (FECOFUN) has been operating since 1996 as a representative of CFUGs. More than 11,400 have been federated under the FECOFUN umbrella. FECOFUN is organized with a national secretariat, with regional and district chapters to support local user groups and influence government policies and decisions in favor of CFUG interests. FECOFUN is active in policy advocacy, awareness building, and participation in forest policy development (Ojha 2002; FECOFUN 2007).

Improved community infrastructure (physical capital)

Community forestry was conceived of as supporting the subsistence lifestyle of Nepali farmers. The regulations stipulate that community forestry funds are to be kept in a common fund, not distributed to the users, and can only be used for improvements to the forest or for village level development. One of the surprises of early evaluations of the program was how these locally controlled common funds were being used to support local development initiatives (Sowers et al. 1994). As the fund increased through the sale of surplus products, so has its potential for benefiting the local community. This is now a widely accepted phenomenon, with examples of locally initiated development that include improved drinking water supply, support to schools, construction of community halls, contributions to temple or monastery construction, village electrification, and road repair, among others (NACFP and NEFEJ 2005; LFP 2006; Subedi 2006). In the groups studied by Kanel and Niraula (2004), 36 percent of their annual expenditures went toward community infrastructure development.

Improved credit opportunities (human capital)

Breaking free from the cycle of debt incurred by relying on the local money lender or the formal banking system can be a big step forward in improving the financial security of local people. A study by the microcredit support agency in Nepal found that CFUGs were remarkably strong community-

based organizations, with the leadership, management skills, and internal systems to support successful microcredit operations (Micro Finance through forest user groups: A good fit? 1999). Many CFUGs institute a microcredit scheme by which members can borrow small amounts from the common fund for income generating activities. The interest rate of the loan is fixed by the CFUG, and is nominal compared to other banking systems, ranging from 0 to 10 percent in the Parbat district (Binayee et al. 2004). They found that the Bause CFUG was a successful example of the micro-finance-system's contribution to forest-products-based enterprises. The CFUG provided loans to the four poorest households to establish a bamboo craftmaking enterprise. They earned 36,340 rupees from their business in 18 months after repaying the loan. Similarly, the Dhureni CFUG made a low-interest loan to a poor woman from an underprivileged caste. She used the money to start a poultry business and was able to repay the loan in six months while retaining a 7,000 rupee net profit (LFP 2006).

Improved livelihood opportunities

As community forest managed resources have grown and legal provisions regarding harvest and sale have been enacted, business opportunities have developed through product sales and secondary processing. A study by the Asia Network for Sustainable Agriculture and Bioresources (ANSAB) showed 25 percent of household income in the Humla district was attributable to nontimber forest products (NTFPs) business relying on community forests (Subedi 1999). Kanel and Niraula (2004) calculated the total annual income to CFUGs at 1.9 billion rupees. However, only 3 percent of that amount went to direct support for the poor.



Women working in Lotka paper-making enterprise.
Photo by: ANSAB

Another study reported that people with low incomes are getting more forest products, especially grasses, fodder, and fuelwood, in community forestry (Adhikari et al. 2007). Subedi (2006) found similar results, that enterprise development increased group revenues by 120 percent in the high mountain districts.

Businesses relying on community forest products for their raw materials have been operated by CFUGs and in the private sector. They provide much needed employment to rural households. Business opportunities relying on community forest products include sawmills, furniture manufacturing, and processing of nontimber forest products including medicinal herbs, Daphne paper making, allo handicraft production, and leaf plate making (Edwards 1996; Subedi et al. 2002). One furniture manufacturer working from wood grown on the Bhorkhore community forest is employing the seven poorest members of the user group (Acharya and Achary 2007).

Two community-run sawmills, established with assistance from the Nepal Australia Community Resource Management and Livelihood Project, are providing markets for CFUG logs and employment for CFUG members. Besides these community-run sawmills, there are many private sawmills throughout Nepal that are beginning to benefit from logs grown on community-managed forests (NACRMLP 2006). A successful example, a CFUG-based handmade paper business, is mentioned in Singh (2005). This enterprise established better collection practices of raw materials, had good financial management, and developed promising national and international market linkages. ANSAB has facilitated the certification of CFUG- and forest-based industry. This process has brought recognition to the CFUGs as managers of sustainable forests, and to the paper business as a socially acceptable and environmentally friendly paper producer (ANSAB 2006).

Often it is the wealthier members of society who benefit most from these value-added business opportunities (Malla et al. 2003). However, in hill districts, Subedi (2006) found improving trends in access for women and the disadvantaged in community forestry and forest-based enterprises after implementation of the enterprise-oriented community forestry program. This study points to an approach to be taken to poverty reduction and equity issues in community forestry.

Biodiversity Costs and Benefits

Community forestry has rightly been credited with the re-greening of the hills of Nepal. This is evident to anyone traveling through Nepal's mid-hills. A

study of eleven CFUGs by Yadav and Dev (2003) found that conditions had improved in all the forests studied. This agrees with a baseline forest resource assessment (Yadav and Branney 1999) and a hill livelihood baseline study (LFP 2006) that likewise found an overall improvement in forest conditions under community forestry management. A forest cover change analysis, conducted by the Department of Forests (2005) found forest cover increasing in the hills by an average rate of 0.06 percent per year.

Mikkola (2002) found that CFUGs were sensitive to the need to conserve wildlife and rare plant resources. The communities she studies had rules prohibiting the collection of certain species known to be locally endangered, or had certain no-collection areas allocated for conservation management. With the increase in nondegraded forest cover has come an increase in the quality of wildlife habitat. Villagers report more birds, mammals, and (somewhat disturbingly) more leopards and tigers in the vicinity (Malla et al. 2003). In the Sundari community forest, four rare and endangered species had noticeably increased in numbers following community management (White 2004). In another study, Pandey (2007) found comparatively higher tree species diversity on community-managed forest stands, but a poorer representation of older size classes. This finding is contrary to the results of Acharya and Gautam (2004) who found less tree species diversity on community forests, but a greater diversity of herbaceous plants.

All community forests benefit from the forest management controls imposed by the user groups. These controls include limiting grazing, guarding against illegal harvesting, and proactive management to promote the growth of high economic value species (Burch et al. 2003).

Sustainability Analysis

Community forestry in Nepal is being done on a national scale. It has a visible landscape presence and the forest user groups have changed, to some degree, village-level social interactions. One example of their resiliency under extreme conditions is the degree to which CFUGs continued to operate during the recent political difficulties in areas of Nepal under Maoist control. Although hindered in their ability to manage their forests, Rechlin et al. (2007) found that CFUGs did not disband, and, in fact, often took responsibility for health care and other social services normally provided by the government.

Social and environmental sustainability issues, however, do remain. Researchers are concerned with the tendency for village elites to usurp power within the user groups. This becomes more problematic as more money accumulates in the community bank account. Questions arise about equity in the distribution of benefits from those funds. If the poor and disadvantaged are increasingly marginalized from decision-making will they continue to

abide by the agreed upon harvest restrictions in the operational plan?

Likewise, there are concerns about the long-term biological sustainability of the prescribed silvicultural systems. Bhatta and Shrestha, in a 2007 study on litter removal practices, question the impact of aggressive harvesting on long-term nutrient budgets. They raise the question of the long-term ecological and biodiversity impacts of a management system that focuses solely on forest products, and look forward to a second generation of community forestry operational plans that include provisions for biodiversity enhancement and the maintenance of ecological services (Bhatta and Shrestha 2007). Similar concerns have been raised in other studies, with the possible conversion of natural forests to single species or limited species forests as CFUGs focus their attention on economically valuable timber species (Acharya et al. 2004; Pandey 2007).

ANSAB has initiated Forest Stewardship Council (FSC) certification to support environmentally, socially, and economically sustainable forest management in Nepal. As a coordinator, it has promoted several forums and loose networks that raised awareness and strengthened the capacity of national and local stakeholders to abide by the sustainable forestry requirements of certification (Subedi et al. 2004; Subedi 2005). Currently, a total of 21 CFUG-managed forests have been certified. Certification has generated significant cash benefits to CFUG members from the sale of forest products (Subedi 2005; Dahal 2006). Similarly, the participatory biodiversity monitoring practices, facilitated by ANSAB, produced positive changes in resource harvesting practices in the project areas (Burch et al. 2003). These are examples of activities that would promote sustainable community forestry in Nepal.