SECTION 4

Forest management modalities and institutional issues

10

Small Wood-based Enterprises in Community Forestry: Contributing to Poverty Reduction in Nepal

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Introduction

The main forest management strategy of Nepal, based on forest dependent peoples' participation, is known as community forestry (CF). This approach was formally introduced in the late 1970s to encourage active participation of local people in forest management as a means to improve livelihoods. Since then, a strong legal and policy framework has been adopted to secure local people's rights and access to forests. By 2006, community forestry had grown to involve one third of all households in the country. Under the community forestry program, local people decide on forest resource

management and utilization and distribution of benefits to community members. Local people are organized into Community Forest User Groups (CFUGs). The Community Forestry Program in Nepal is one of the most recognized success stories for community-based forest management.

The primary motive for promoting community forestry initially was its potential to provide basic forest products such as firewood and forage to rural people, to improve their livelihoods, and to preserve the hills of Nepal from further degradation (Acharya 2002; Malla 2000). The promotion and implementation of CF in Nepal significantly affected the lives of many people in the rural areas of Nepal. The CFUGs that have been established in many communities are concerned with sustainably producing a wide variety of forest products based on local demands (Branney 1996). By 2006, about 14,500 CFUGs were involved in forest management, silvicultural operations, utilization of resources and the marketing of various forest products.

With its advancement, community forestry has been recognized increasingly as a viable means for poverty reduction in Nepal (Kanel 2004; Gentle 2000). The tenth government periodic plan specifically mentions CF as an approach to address rural poverty in Nepal. During the fourth National Workshop on Community Forestry, there was extensive debate on how community forestry can contribute to poverty reduction. Secure access to resources, and the recognized decision-making authority of the poor in the management and utilization of community forestry for equitable benefits sharing, were the major challenges identified (Kanel 2004).

Community Forestry and forest- based enterprises

The community forestry policy of Nepal is regarded as a progressive method for establishing the rights of local people over forest resources; however, the promotion of forest-based enterprises has been limited. Recently, more CFUGs are initiating poverty alleviation activities, helping to establish community forestry as a recognized pro-poor program. The main areas of intervention include the promotion of income-generating activities and establishment of concessions for forest products distribution. The income-generating activities include domestication of non-timber forest products (NTFPs), support to livestock production, and establishment of Forest-Based Small-Scale Enterprises (FBSSEs). The recent focus of FBSSEs is on the promotion of NTFP domestication, linked to the establishment and management of NTFP-based enterprises (Subedi 2006; Binayee *et al*. 2004). Subedi *et al*.(2002) argued that forest-based enterprises have the potential to contribute to better management of natural resources, along with providing income and employment opportunities to poor and disadvantaged groups. A considerable amount of information has been gathered in the past on NTFP-based enterprises. However, evidence suggests that a large proportion of benefits is captured by outsiders, especially middle men (Sharma 2003), and the poor are not always able to fully exploit the opportunities available from community forestry.

The development of small scale enterprises based on the existence of local resources, local skills and local markets could be a good option for poverty alleviation. Subedi (2006) believes that enterprise-oriented community forest management can generate positive outcomes for both conservation and local livelihood development, while Angelsen and Wunder (2003) identified small-scale wood processing enterprise development as a high priority area for poverty alleviation. This paper brings together information that is currently available from two wood-based FBSSEs in Nepal, and examines their impacts on forest management and livelihood development.

Case Studies

The first case study describes a furniture enterprise, located at the Bharkhore CFUG in Parbat district. The second highlights an Agricultural Implements Production Enterprise (AIPE) located at the Ghorlas CFUG in Myagdi district.

Case study 1: Furniture enterprise, Parbat

Establishment

A series of meetings and discussions were convened in the Bharkhore CFUG to initiate activities to improve the livelihoods of the poor, where different households were identified to initiate a range of household-based activities. During this process, five households and the CFUG agreed to establish a furniture enterprise. The criteria for the selection of households were the wealth category of the household, the possession of traditional skills and a willingness to participate. The CFUG formed a furniture sub-committee to implement the establishment of the furniture enterprise. The decision to establish the enterprise was forwarded to the district level network of the CFUGs, known as the Federation of Community Forest Users, Nepal (FECOFUN). FECOFUN helped to identify a bilateral donor, the Livelihoods and Forestry Program (LFP), which agreed to support the enterprise development. The District Forest Office (DFO), Parbat that analyzed the prospects of such an enterprise facilitated the overall process. A business plan was prepared, including analysis for such an enterprise based on current furniture supply and demand.

The furniture enterprise was established in 2004. Out of a total investment of NRs. 57,800 (approximately US$ 780), LFP supported NRs. 35,800 (US$ 480) as a grant. The grant was used to purchase equipment such as a small circular saw, planer, electric motor, etc. The CFUG provided NRs. 10,000 (US$ 135) in the form of a non-interest loan and additional raw wood supplies equivalent to NRs. 6,000 (US$ 80) to start the enterprise. The remaining NRs. 6,000 (US$ 80) of the total investment was supplied by the entrepreneur households.

Products and production mechanism

The enterprise mainly uses round logs, saplings and poles as input materials. There are four types of products from the enterprise: two main products and two by-products. The main products are house construction materials and furniture, while firewood and saw dust are the by-products generated during processing: i) the customer brings raw material to the enterprise, which then produces the requested products and charges for the service; ii) the furniture enterprise provides its services by visiting the customer's house and produces the requested products on site; and iii) the customer places an order for the products and the enterprise produces and delivers. In all three instances, the enterprise sets the price for the products or the rate of the services provided.

The average annual maintenance cost of the enterprise for the past two years, including the annual lease for land, electricity charges and workshop maintenance, is about NRs. 20,000 (US$ 270). The raw material consumption is 6–8 ft^3 per day, varying from a minimum of 2 to a maximum of 20 ft^3 per day (< $1m^3$). The past two years of data show that a significant proportion of species processed are from outside the Bharkhore community forest, either originating from adjoining community forests or from private lands. The primary species used during the past two years was as follows: sal (*Shorea robusta)* 30%, sallo (*Pinus roxburghii*) 40–50%, utis (*Alnus nepalensis*) 20% and others (*chilaune- Schima wallichii, katus - Castonopsis spp*, and *sisso - Dalbergia sissoo*) 10%. It should be noted *sallo* is not available within the CFUG area and is being imported from other parts of the country.

Employment and income

The enterprise has generated year-round employment for four individuals and one additional skilled employee outside the community. Since the establishment was supported by grant from the donor, income was realized immediately and has since risen sharply. The monthly average income for the past 24 months was NRs. 10,000 (US$ 135) per household for four households after deducting the monthly payment of NRs. 6,000 (US$ 81) to the outside employee (one household of the original five dropped out of the enterprise). The total income from the furniture enterprise during the past two years is NRs. 720,000 (US$ 9,730). The earned income has been used to pay back loans received by the entrepreneur prior to establishing the enterprise.

Forest management and the enterprise

The CFUG has adopted a regulated harvesting system which is defined in the operational plan. The forest is divided into five blocks and each block is harvested annually. The system allows a steady supply of forest products to the community and ultimately to the enterprise. In addition, an increasing availability of plantation trees is also contributing to the supply of raw materials to the enterprise. The harvesting mechanisms, such as sectioning of logs, has been carefully applied so as to reduce waste and maximize recovery during processing. Production from nearby community forests and private farms also supplies significant amounts of raw material to the furniture enterprise.

Record keeping and monitoring

There are provisions in the community regulations that require the enterprise to update its record of inputs and outputs monthly, which the CFUG then has to monitor. The record keeping system is currently very poor, with only a few instances where monthly records have been updated and maintained. The entrepreneurs have not felt that formal record keeping is important, as it was not required in their traditional jobs. The CFUG also has not been able to conduct the required monitoring and enforce the requirement. A contributing factor to the poor record keeping is the low literacy levels of the participating households. However, the households involved generally believe that the enterprise is profitable and doing well.

Reasons for success

The main reasons for the successful operation of the furniture enterprise are as follows:

- The selection of the right enterprise and entrepreneurs: (this can be measured by willingness of participants, pre-existing skills and utilization of traditional practices);
- The location of the enterprise within the district capital has provided a broad and easily accessible market, while the housing construction in the area requires a considerable amount of processed wood of the type produced by the enterprise;
- The ready availability of raw materials from the community forest, other community forests in the area, and local private farms;
- There has been a growing market for furniture due to improved income, combined with changes in the behavior of consumers in relation to home furnishings (e.g. transition from the use of traditional floor mats to the use of chairs and tables);
- Locally available sawmill equipment that produces waste has motivated the use of smaller sized timber for furniture purposes, resulting in an overall increase in furniture volume;
- Strong institutional support from the CFUG, FECOFUN and the bi-lateral donor (LFP); and
- Low investment input from the entrepreneur helped the operation become profitable almost immediately, which boosted the motivation of the households involved.

The furniture enterprise demonstrates a multi-party partnership modality for developing a FBSSE within a CFUG. The enterprise consists of five major stakeholders: individual households organized into a CFUG, a sub-committee, LFP (donor), consumers of forest products, the CFUG and FECOFUN. The main reasons for its success are the employment opportunities, earned income, the fact that repayment of the entrepreneurs' loan can be made after production of the furniture, and an almost immediate realization of earned income and savings. In addition, the furniture business is going well and is perceived by local consumers as providing a needed service, which can be regarded as a positive indicator. The FBSSE is based on local resources, local skills and a local market, all of which are easily accessed.

Case study 2: Agricultural implements, Myagdi

Establishment

A household-based AIPE was established by the Ghorlas CFUG in the year 2004. Four poor farmers having traditional skills were encouraged to engage in the commercial production of agricultural implements. A simple informal business plan was developed that described the households involved, existing supply and demand, operation of the potential market, cost estimates, and the procedure for formation of a sub-committee. The plan recognizes that it is real challenge for farmers to secure traditional agricultural implements, such as ploughs, during the planting, growing and harvest season. The plan indicated that the local forest resources, local market and local skills necessary for the enterprise were available, but there was a lack of motivation to fill the market need. To overcome this inertia, the CFUG provided various types of support, from facilitating the initial establishment to the marketing of the products once they were being produced. The DFO and the LFP supported the creation of the FBSSE by providing financial assistance. A sum of NRs. 3,600 (US$ 49) was provided to each household to support the purchase of tools necessary for producing the agricultural implements. In general, the cost associated with purchasing tools and subsequent maintenance is lower than the financial assistance provided by the DFO and LFP. The average purchase price for one set of tools required for establishing an AIPE is NRs. 1,500 (US$ 20). The main equipment in the set includes an axe, saw, sharpener and hammer. One set can prepare hundreds of finished products, while regular servicing and maintenance is provided by the farmers on site with limited or no additional costs other than the time and labor involved.

Products and production mechanism

The CFUG operational plan prescribes provision of deformed or crooked trees and other wood materials to the AIPEs for product production. The AIPEs primarily use logs and saplings, which the CFUG directly provides along with other wood at a rate of 60 ft^3 (1.7 m^3) per year per entrepreneur, at half the price that other users must pay. In addition to charging the reduced rates, the CFUG has coordinated with two nearby CFUGs for necessary raw materials to support the AIPEs.

There are six different products being produced. The local names of these products are *halo, juwa, danda, mohi, Iidko* and *anau*. The aggregate of these components make a complete set of traditional agricultural equipment for a family farm. The size of these implements varies from lengths of 75cm to 250cm, so their production does not require long or large-sized raw wood materials. The preparation of these products with their specific size, shape and structure requires a great amount of skill, however. These skills have been handed down from generation to generation. The past two years of production by the entrepreneur households is presented in Table 1. The quantity of the various products produced varies significantly from one farmer to another. The reasons for this discrepancy include the willingness of the individual to produce the products, combined with their ability or skill at marketing their services and products.

Table 1: Quantity of production during the past two years

Name of the entrepreneur	Kinds of products and quantity produced in the past two years (number of implements)					
	halo	*juwa*	*danda*	*mohi*	*lidko*	*anau*
Purna	250	25	30	10	2	25
Jeet	150	10	12	2	1	0
Dharma	120	5	10	3	0	0
Nara	100	5	6	7	3	0
Total	**620**	**45**	**58**	**22**	**6**	**25**

Pricing mechanism and marketing

The price for each of the products has been fixed by the CFUG and not by the entrepreneur. The CFUG-regulated pricing system is intended to make the entrepreneurs accountable to other members of the CFUG, while fixed pricing avoids problems related to the development of monopolist pricing, facilitates the selling of products outside the CFUG, and creates a perception among all community members that the benefit from this enterprise development is not limited to only a few households. One complete set of products costs NRs. 1,140 (US$ 15), the price of which has been constant for the past two years. The prices of the products are generally less expensive than before establishment of AIPEs, and CFUG members benefit from easy access to these necessary products so there is no interruption in agricultural production during critical times. There is no problem in finding a market for the products, as they are being sold based on advanced booking directly at the entrepreneurs' homes. The customers are from the CFUG and neighboring villages. As an example of the ready market demand, the average farming household in the region requires 1–3 *halos* each year.

Employment and income

The creation of the AIPEs is a major source of additional income and employment to the farmers involved, though agricultural wages are still regarded as the primary source of income. The production of the products takes place within the household during leisure time. The data are encouraging, as they clearly illustrate that these FBSSEs are increasing household incomes. As shown in Table 2, the income generated is substantial and illustrates that AIPEs can lead to poverty alleviation in other locations.

Table 2: Earned income during the past years (NRs.)

Name of the entrepreneur	*halo*	*juwa*	*danda*	*mohi*	*lidko*	*anau*	Total	Total in US$
Purna	50,000	3,750	6,000	1,500	600	375	62,225	841
Jeet	30,000	1,500	2,400	300	300	0	34,500	466
Dharma	24,000	750	2,000	450	0	0	27,200	368
Nara	20,000	751	1,200	1,050	900	0	23,900	323
Total	124,000	6,750	11,600	3,300	1,800 (6)	375 (25)	147,825	1,998
Total in US$	1,675	91	157	45	24	5		

Forest management and the enterprise

The production of raw wood from the CFUG is regulated by the operational plan and excessive removal is restricted. Silvicultural activities are regularly implemented as prescribed in the OP. Beyond the 60 ft^3 (just under 2 m^3) of subsidized wood provided by the CFUG to the entrepreneurs for production purposes, additional quantities are purchased from the neighboring CFUGs, which have been coordinated by the CFUG. Similarly, the entrepreneurs are free to collect raw materials direct from private tree growers or local markets. The AIPE demonstrates an opportunity to provide employment and generate income in rural areas that contributes to poverty alleviation while sustainably managing forest resources. This illustrates that good forest management and poverty reduction can go hand in hand.

In addition, the establishment of the AIPEs has had other positive forest management impacts. While previously there was little thought to what types of saplings were planted or how they were used, now the CFUG members recognize that certain species are in demand based on implement production needs. There is now a preference for planting species which will be used by the AIPEs, such as *chilaune* (*Schima wallichii*). This is also true for thinning and coppice management. It is safe to say that the CFUG members have a greater appreciation for these species that are now in demand, and it is being reflected in the OP. For example, *chilaune* is only allowed to be supplied to the AIPEs, unless the quality is inadequate for their use.

Processing of logs has become far more efficient, as illustrated by greater recovery rates, which is a direct result of the AIPE establishment and increased demand for specific wood products. While one round log used to produce only one agricultural implement, the introduction of rectangular sawn wood methods means that one log can be used to produce several products. The use of sawn wood also led to an improvement of the quality of products being sold due to reduced warping.

Record keeping and monitoring

The entrepreneurs and the CFUG are maintaining good records on the types of products being produced, the quantity of each product being produced, income generated, and the production times involved for different products. This has created a good database of information from which conclusions can be drawn and lessons learned.

Reasons for success

The main reasons for the successful operation of the AIPE enterprise are as follows:

- The selection of an appropriate enterprise and qualified entrepreneurs;
- The AIPEs benefit from their location due to the fact that the surrounding hills are dominated by agricultural practices that require their products;
- The local availability of necessary raw materials, existence of specialized traditional skills and a high level of motivation to succeed by the parties involved;
- Strong institutional support to the enterprise from the CFUG, DFO and the donor;
- Lower prices for the consumers, combined with substantial additional income for the producers; and
- Production times are flexible, so the previous income activities of the participating household can still be pursued.

This case study illustrates that FBSSEs that produce goods from locally available resources, using local skills, where there is the presence of a local market for the products, have a high chance of success with proper support. It clearly demonstrates the potential of community forestry to develop and maintain FBSSEs through linkages with active forest management. The AIPEs also demonstrates that very small- scale enterprises can be commercialized. The success of these enterprises has been replicated in several neighboring CFUGs. Additional benefits include increased knowledge and appreciation by CFUG members of specific species in demand, increased efficiency in wood production to better supply the commercial activity, and improved availability of necessary farming implements for those in the immediate region which leads to savings in time and money.

Lessons Learned

The forest-based small-scale enterprise establishment initiatives of local communities may need strong moral, technical, institutional and financial support from the facilitating agencies. In both of the case studies examined, the enterprise-establishment process was initiated by the CFUGs, but the achievements were reached with the support of various other stakeholders. The furniture enterprise establishment was guided by the economic motivation of the entrepreneurs supported by the CFUG and facilitated by the forest users' federation, DFO and LFP. The AIPE was a demand-driven initiative from the CFUG, with support and facilitation by the DFO and LFP. While there can be differences, the FBSSE establishment process and procedures can generally be summarized in the five steps presented in Table 3.

Table 3: Steps and main activities in establishing an FBSSE

Step	Descriptions	Output
Identification of entrepreneurs	Small group meetings to identify those with necessary skills, interest and willingness	Entrepreneur households selected
Identification of enterprises	Forest products or species locally available, local skills available, local market present, resources for startup available	Selection of proper enterprise
Preparation of business plans	Formal or informal, supply-demand market analysis, marketing plan, funding needs, identification of key stakeholders, defining roles and responsibilities	A simple business plan developed and support funds secured
Enterprise establishment	Combine resources and develop an enterprise for processing	Enterprise established
M&E	Continuous support to stakeholders, including monitoring and evaluation based on good record keeping, for an extended period to ensure success of the FSSBE while also ensuring sustainable management of local natural resources.	Continuous improvement, successful FBSSEs, livelihood development, poverty alleviation, and natural resources sustainably maintained.

Investment, employment and income

The investment amount required depends on the nature of the enterprise being established. The furniture enterprise required a higher start up amount (NRs. 57,800 or US$ 780) compared to the AIPEs (NRs. 3,600 or US$ 49 per entrepreneur). The furniture enterprise created five full-time employment positions, while the AIPEs created part-time employment for five households. The total earned income from the furniture enterprises was NRs. 720,000 (US$ 9,730) during the past two years, while the four AIPE households earned NRs. 147,000 (US$ 1,990). The AIPEs require no full-time work positions, and all the income generated from AIPEs during the past two years is additional income to the entrepreneur households. Similarly, out of the income generated by the furniture enterprise, NRs. 288,000 (US$ 3,890) was additional income to the entrepreneur households (they estimated that they would have earned NRs. 432,000 – US$ 5,840 – as skilled labor if there was no furniture enterprise). The additional amount earned in both cases illustrates the significant potential of FBSSE promotion as support to poverty alleviation and livelihood development in association with community forestry. The enterprises in the case studies are providing employment and generating income in rural areas, indicating that good forest management and poverty reduction can go hand in hand. The commercialization of the AIPEs shows that forest management should not be considered in isolation, but should be linked with existing or traditional livelihood opportunities and farming systems that promote the use of local materials and skills, with a focus on providing employment to poor and vulnerable groups.

Raw materials and production

Both of the case study enterprises use wood as a raw material. Although the major source of raw material is community-managed forests, enterprises are utilizing resources from private lands and national forests. The main products from the furniture enterprise include house construction materials and different kinds of furniture, while firewood and saw dust are by-products generated during the processing. The APIEs produce at least six different kinds of agricultural implements used on local farms.

Market characteristics

Both of these enterprises target their goods and services to local markets. The furniture enterprise has faced competition from five or six similar private enterprises, while the AIPEs are selling their products as pre-ordered items sold directly from the household, with only those farmers who still make their own tools representing competition. The prices charged by community-based enterprises, as illustrated by the case studies, may be fixed by the entrepreneurs or by the CFUG in the operational program.

Nature of enterprises

Both enterprises are processing natural materials using low-tech, low-cost production techniques. The furniture enterprise can be classified as a workshop model employing relatively higher numbers, while the APIEs are operating at the household level as defined by Arnold (1994). The AIPE households are operating independently, while the furniture entrepreneurs are working as a unit.

Key stakeholders and roles

The community-based FBSSEs have five key stakeholders in both instances. These include the CFUG, DFO, LFP (donor), local people and the entrepreneurs. The willingness and commitment of the entrepreneurs are fundamental requirements. There should be a strong institutional, financial and material support from the CFUGs. The facilitation and institutional support of the DFOs and the LFP, along with the financial support from the LFP, were instrumental for success. The overall support from general members of the CFUGs, combined with positive

attitudes of all involved, is essential for building a strong foundation. A simple conceptual model for FBSSEs is presented in Figure 1 below.

Links with forest management

The case studies indicate that local people are able to modify their forest management practice in response to raw material demands. The system allows a steady supply of forest raw materials to the CFUGs and ultimately to FBSSEs. In addition, an increasing number of plantations are also supplying raw materials to the enterprises. The CFUGs can support such enterprises through supplying a set quantity of subsidized woody material to them. In this way CFUGs can also create a favorable environment for obtaining wood materials from neighboring CFUGs and private tree growers.

Figure 1: Conceptual framework for FBSSEs

Silviculture and species preferences: In the earlier years of community forestry, users gave little attention to beneficial aspects of various species while selecting seedlings for planting, generally using whatever species was available. However, the utilitarian benefit of the species is now the main criterion in selecting species for planting. During the removal of the plants in silvicultural operations, priority is now given to maintain and promote species such as *chilaune* (in the Myagdi case study), which is regarded as the best species for the production of agricultural tools.

Promoting private tree planting: A large number of plant species are maintained on the farms in the hills of Nepal. The FBSSEs have encouraged the planting or maintenance of selected tree seedlings on private land, while the CFUGs have established forest nurseries to promote private tree planting in order to supply the enterprises in the future.

Wood utilization: Harvesting methods, such as the sectioning of logs, have been carefully applied to reduce waste during processing and increase recovery rates. Modifications have resulted in the use of rectangular sawn wood, which means one log can produce several agricultural products as opposed to one, and one sapling can produce several logs in the future.

Policy and management implications

The development of policies in support of sustaining FBSSE development and related poverty alleviation must ensure that the policies have the intended results. Current policy issues include regulations that discriminate against the harvesting of various tree species on farms, requirements that place unreasonable costs or regulatory burdens for the transportation of products, location requirements for forest-based enterprises and registration processes that impede the development of FBSSEs, and other issues.

A thorough review of existing rules and regulations should be conducted to analyze how they impact on FBSSE development and operation. In this way, any rules and regulations that have a chilling effect on the creation and profitable operation of such enterprises can be addressed in order to ensure the full poverty alleviation potential of community forestry in Nepal.

Conclusion

The case studies illustrate that the promotion and implementation of FBSSEs can affect the livelihoods of many people in the rural areas of Nepal, underscoring the relevance of community forestry in reducing poverty. The initiatives encompass a wide range of activities supporting the production of value-added forest products that range from subsistence-based agricultural implements to furniture enterprises. The case studies indicate that wood-based enterprises have an important place in the ongoing development of community forestry and local people are able to modify their management of forests to sustain the enterprises once established. Local market demand, local skills and local raw materials, combined with strong institutional support, are critical for successful FBSSEs. The selection of the right entrepreneurs and enterprise options, along with continuous follow up and counselling, are basic requirements for success.

Local people primarily benefited from the forest-based enterprises through entrepreneurial development, rather than as employment-wage laborers, which was the tendency in previous practice. Unlike other enterprises that utilize non-timber forest products, there is no room for middlemen to absorb most of the profits, due to direct local marketing and processing. There are easy and direct linkages between the suppliers of raw materials, the producers of the final products and the consumer. This has shortened the marketing chain and increased local benefits.

For the full benefits of these enterprises to be realized, there is a need for policy advocacy in favor of this concept in conjunction with promotion of community forestry, with a focus on disadvantaged and poor communities. In addition, the agencies and stakeholders facilitating FBSSE development process should initiate feasibility studies to properly identify appropriate enterprise development in each community forest. The support staff needs orientation on appropriate attitudes for working with the poor. The scaling up of best practices, based on experience and lessons learned, is equally important.

Finally, the existing primary fund collection mechanism in the community forestry program originates from rather limited earned income from the selling of low-value forest products such as firewood and timber to community users at subsidized prices. The benefit-sharing mechanisms of these funds do not allow income to pass as a direct benefit to individual households, and the majority of funds allocated for purposes that would not generally be classified as pro-poor activities. The provision of immediate and direct household-level benefits to the poor and vulnerable groups, which would lead to the significant reduction of

rural poverty, is possible through the promotion of appropriate FBSSEs in community forestry programs.

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11

Community Forestry: Supporting Bhutan's National and MDG Goals While Protecting Forests

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Introduction

Community forestry in Bhutan was introduced in its current form relatively recently, in 2000. There are currently 36 approved community forests covering 2,914 ha, with 1,664 households managing designated CF areas. Approximately 15 additional community forests are currently in various stages of preparation prior to approval (initial application, resource assessment, preparing the management plan, or final approval process).

Forests are very important for the rural communities in Bhutan, as they supply many products like timber, fuelwood, grazing fodder and vegetables. The CF Program in Bhutan seeks to strengthen the link between people and forests and can make a significant contribution to livelihood improvement, environmental conservation and sustainable use of forests. This paper will document the potential impact of the CF Program.

At the time of its initial introduction in 1992, CF was seen as a potential threat to the conservation-oriented National Forest Policy. This skepticism still exists, but as evidence of the positive impacts of CF emerges, policy is changing to further support the CF program. Furthermore, if CF is fully developed, its contribution to the National and Millennium Development Goals will be significant.

Background

About 72% of Bhutan is covered with forests. The total forest area is 2,904,522 ha, of which 26% is classified as protected area, 9% is biological corridors, 8% is designated as forest management units, and the remaining 57% is reserved forest. The long-term goal of the forestry sector is to keep 60% of the country area under forest cover in perpetuity.

Evolution of Community Forestry Programme

The CF Program has evolved since 1979 when His Majesty initiated the Social Forestry Program. In 1985, 2 June was declared Social Forestry Day, coinciding with the Coronation Day of the fourth King of Bhutan. The aim of Social Forestry Day was to promote tree planting and create environmental awareness among the Bhutanese youth. In 1992, some forestry activities were decentralized to the districts from central level, including the CF Program. The CF Program was legalized in the Forest Nature Conservation Rules (FNCR) 2000 and revised in 2003 (see Box 1).

Box 1: Statement of Community Forestry in Forest and Nature Conservation Rules (2003)

Any area of the Government Reserved Forest that is suitable for management by a Community Forest Management Group may be designated as community forest.
All individuals and households with traditional claim to forest produce from the proposed community forestry area have the opportunity to join the Community Forestry Management Group.

The CF Program was given further impetus in the ninth five-year plan (2002–2007). The plan defines community forestry as a broad development strategy that can embrace diverse forms of local decision making in all sorts of forestry matters that affect people's lives.

Other relevant policies

The Department of Forests (MoA 2003) states that subsidized timber (so-called rural timber supply) for rural construction will be supplied based on quantities specified in FNCR Volume II, 2003. The royalty imposed on this timber is minimal, ranging from Bhutanese Ngultrum (Nu). 4–40 per tree depending on sizes.[1] The rules stipulated that for new house construction the

[1] *US$ 1 = Nu. 45*

Thram holder, or resident, has the right to subsidized timber every 25 years and renovation/ extensions to a house every five years.[2] The FNCR 2003 states that dry firewood can be collected free of royalty by rural communities.

The National and Millennium Development Goals

The Royal Government of Bhutan (RGoB) states in the Millennium Development Goals Progress Report (2003: 7) that *"poverty in Bhutan remains a predominantly rural phenomenon."* Poverty reduction in these rural areas is the main national goal outlined in the 10th five year national plan (2007–2012). The RGoB is also fully committed to the United Nations Millennium Development Goals (see Box 2).

Box 2: Bhutan's commitment to UN Millennium Development Goals

To ensure popular participation and continue delivering tangible benefits from political and economic modernization, the Royal Government of Bhutan has resolved that poverty reduction shall be the main objectives of the 10th Plan and also remains fully committed to meeting all the Millennium Development Goals (RGoB 2003: 3).

The CF Program targets the rural population by improving their livelihoods and environmental resources, thereby contributing to the national and millennium development goals. The eight UN Millennium Development Goals are to be achieved by 2015. Two of the goals (one and seven) are directly relevant for community forestry in Bhutan. The first goal is to eradicate extreme poverty and hunger, while the seventh is to ensure environmental sustainability. While the CF Program can certainly contribute to meeting these goals, it will also contribute indirectly to other MDGs, such as promoting gender equality and empowering women.

Current progress of community forestry

As of August 2006, 36 community forests, covering 2,914 ha, have been approved by the Department of Forests (DoF), involving 1,664 household managing the community forest areas. Currently, the average community forest area is only 1.75 ha per household. The FNCR 2003 allows the size of community forests to be 2.5 ha per household, subject to marginal increase or decrease depending on the local situation. The reason for this difference is that communities initially had their doubts about the policy as community forestry was mainly regarded as a community plantation program, and about 50% of existing degraded forests were to be included in any community forest. The current trend is for communities to apply for the maximum area if the forest is near and around their villages. This is because communities are now convinced that community forests will be allocated and that large areas of degraded forest will not be included.

Admittedly, the CF Program had a slow start. The main reason for this was the initial skepticism of the communities about whether the DoF would actually hand over government forest areas for their management and use. Initially, the DoF was also concerned that CF would have a negative impact on the conservation of the forests and the overall forest cover.

Other reasons for the slow implementation of the Community Foresty Program were the limited capacity within the forestry services and communities, poor communication between the communities and DoF, changes in the Community Foresty rules and initial differing interpretations of the FNCR. With greater awareness of the legal framework by

[2] *"Thram" is the Bhutanese term for registered land in the owner's name*

all stakeholders and clear communication between DoF staff and communities, the rate of community foresty implementation will greatly increase.

Due to the limited number and size of existing community forests, the combined community forest area presently covers less than 0.1% of the total forest area. In response to this, the latest (8th) Renewable Natural Resources (RNR) conference in February 2006 clarified and provided strong support for the further development of community forestry (see Box 3). The RNR resolution will be incorporated into the revised FNCR, which is currently in the final drafting stage.

Box 3: 8th RNR resolution on Community Forestry

Resolution 10: Considering the small size of the total area under community forestry and recognizing its potential in the improvement of protective, conservation, and productive functions of forest and forest ecosystems, the Conference resolved that:

- the forest areas around villages and human settlements as well as the interposing agricultural fields be allotted for community forestry;
- capacity of the forestry staff to implement community forest programs be strengthened;
- the NWFP development in community forests be stepped up; and
- the community forests development activities be documented.

Source: 8th RNR Conference Resolutions, 2006, MoA

Maximum potential community forest areas

Table 1 shows the maximum potential area of community forests in Bhutan, based on rules stipulating that a maximum of 2.5 ha of forest can be allotted per rural household. While the known total forest area is based on 1996 data, new land-use data are being prepared following the redefinition of national boundaries and the total land area is expected to be lower than it was previously. Calculations indicate that the maximum community forest area is 237,944 ha (8.2%) of the total forest area. The revised data on total forest cover based on the revised land area will not significantly change the outcome of the calculation of the maximum potential community forest area. Considering the revised data on the total land area, the total maximum potential community forest area is expected to a maximum of 8-10% of the total forest area.

Table 1: Quantity of production during the past two years

Dzongkhag	Forest area (Ha) *	Total population	Total rural population**	No. of rural households	Max. potential CF area (No. Rural HH x 2.5 Ha)	Potential CF area (% of total forest area)
Thimphu	108,398	98,676	19,491	4,237	10,592.93	10
Paro	83,787	36,433	33,501	7,128	17,819.68	21
Haa	134,447	11,648	9,153	2,080	5,200.57	4
Chukkha	156,605	74,387	41,461	9,214	23,033.89	15
Samtse	127,910	60,100	49,961	9,992	24,980.50	20
Punakha	87,112	17,715	15,423	3,353	8,382.07	10
Gasa	144,872	3,116	2,714	696	1,739.74	1
Wangdue	298,072	31,135	23,613	5,247	13,118.33	4
Tsirang	48,658	18,667	17,001	3,400	8,500.50	17
Dagana	114,108	18,222	16,264	3,253	8,132.00	7
Bumthang	181,135	16,116	11,913	2,431	6,078.06	3
Trongsa	158,249	13,419	10,724	2,331	5,828.26	4
Zhemgang	184,431	18,636	15,250	3,177	7,942.71	4
Sarpang	190,651	41,549	28,953	6,160	15,400.53	8
Lhuentse	217,350	15,395	13,919	2,961	7,403.72	3
Mongar	172,258	37,069	29,916	6,503	16,258.70	9
Trashigang	180,272	51,134	44,318	10,307	25,766.28	14
Trashiyangtse	110,095	17,740	14,722	3,424	8,559.30	8
Pemagatshel	27,750	13,864	11,577	2,692	6,730.81	24
Samdrup	178,362	39,961	28,997	6,590	16,475.57	9
Jongkhar						
Total	**2,904,522**	**634,982**	**438,871**	**95,178**	**237,944.16**	**8.2**

** Source: Land Cover and Area Statistics of 20 Dzongkhags, 1996, PPD, MOA.*
*** Source: Results of Population and Housing Census of Bhutan, 2005. The FNC Act and FNRC specify that communities adjoining the forests or those with traditional claims can apply for community forestry. We assume that all rural household fulfill these requirements.*

Most of the rural people depend on forests for their livelihood. In some villages in the country, forests are also a main source of cash income from the selling of NTFPs. The Social Forestry Division (2006) stated that during 2003, NTFPs alone contributed US$ 7.6 million to the Gross Domestic Product. Most of the NTFPs are collected by rural people and sold to agencies. A major portion of the country's population depends on agriculture, and therefore forests play a very important role in sustaining the livelihoods of the people in terms of both materials and environmental services.

If all the potential community forestry areas are developed, 69% of the population would be involved in the CF Program. In principle, all rural communities can have access to community forests. As most of the rural population is poor, there is no doubt that a fully implemented CF Program will lead to poverty alleviation and livelihoods development. These benefits are secured through the legal framework of the FNCR, which states that all forest products from

the community forest shall be the property of the Community Forest Management Group, for their own use and for sale on a sustainable basis.

With more than two-thirds of the population potentially to benefit, Dzongkhag Forestry officials should identify the rural communities in each Geog and discuss the potential of community forestry with these communities. If the community is interested, the process of establishing community forests should start immediately. Of course, the capacity of the communities and DoF staff needs to be strengthened to ensure the success of such an initiative.

It is, however, very unlikely that all of the potential community forest areas will be developed. There will be rural communities which are not interested in community forestry due to abundant forest resources in their areas with no competition or threats from outsiders, or due to the rural wood policy (which guarantees access to subsidized timber and fuelwood for the rural population). For these reasons, communities might not recognize community forestry as a priority. Even with this being the case, it is expected that more rural communities will apply for community forests as the benefits from the program become better understood over time. The expectation is that the number of community forests will increase tenfold over the next 5 years. As the rules and regulations make it clear that excess timber can be sold, CFMGs have the opportunity to generate additional income to directly benefit the communities involved in community forestry.

The contribution of community forestry to environmental conservation

Though the CF Program is not mature enough to clearly illustrate the long term positive impact on environmental conservation, there is evidence that it is contributing already, based on observations from the communities involved in community forestry (see Box 4).

Box 4: Community Forestry can rehabilitate water sources

After establishing the community forest there is a constant flow of drinking water. Community Forestry gives the legal right to our community to protect the water source through plantation and controlling tree felling.

Source: CFMG member of Geyzor Community Forest, Zobel, Pemagatshel, 2006.

In the 36 approved community forest management plans, the objective of environmental conservation is explicitly stated, and activities are planned and carried out towards achieving these objectives. Out of a total community forest area of 2,914 ha, approximately 350 ha are degraded. These degraded lands are used for planting locally preferred tree species, with support from the forest extension service. Plantation development (with mainly native species) is carried out to protect water sources and to rehabilitate degraded or barren land, including stabilizing potential landslide areas. All community forest management plans ensure the sustainable use of the resources to maintain the environmental benefits and improve them over time.

Temphel *et al*. (2005) state that many foresters have reported an increase in vegetation cover in the community forest area after the introduction of community forestry. CFMG members also report that there have been improvements in forest conditions since they gained the

rights to regulate harvesting of forest resources and grazing in community forest areas. Buffum *et al*. (2005) add that Community Forest Management Groups are harvesting timber conservatively and at levels below the prescriptions in the community forestry management plan, which means that the CFMGs are very careful in harvesting forest products from their community forests.

Besides controlling the harvesting of resources, communities also invest labor in their community forests for the improved development of the forest conditions. Since the establishment of community forestry in 2000, the Dozam, Yakpugang and Masangdaza community forests have invested 7,524 person-days in silvicultural treatments for the improvement of the forest, fire break construction, to protect the resources from wild fires, tree seedling production, and cane planting within the community forests (Wangdi and Tshering, 2006). If this labor was calculated in monetary terms, it would represent approximately US$ 16,720 of direct investment in the community forests.

As stated by Wangdi and Tshering (2006), the forests of nearby villages that are not involved in community forestry are typically overexploited. Thus, by bringing forest areas under the Community Forestry Program, the overall condition of the forest resources will improve. The Community Forestry Program, if fully implemented, can improve the country's forest resources.

Besides plantation development and other silvicultural activities, the Community Forestry Program also makes the community more responsible for environmental conservation in and around their villages. Temphel *et al*. (2005) state that the first community forest handed over in 1997 had a significant number of wildfire incidents before the area was allocated to the community. After allocation to the Dozam community and formal establishment of the community forest, there have been no such major incidents. Observations show that, in general, the frequency of forest fires has been reduced in community forest areas. An example of other environmental benefits is presented in Box 5.

Box 5: Benefits of Community Forestry

The community forest has benefited us in fuelwood supply, and it also benefits the Samdrup Jongkhar town community. As our drinking water source is within the community forest, watchful conservation and protection of this water source has sustained a good quality and quantity of drinking water.

Source: CFMG member of Ompuri community forest, Orong, Samdrup Jongkhar, 2006.

With an approved community forestry management plan, the communities have rights of access and use for their forest resources according to the management plan. No longer must they go through a lengthy process to get timber permits through the territorial forestry office, as they have their own hammer stamp and permit system. [3] The community only needs to apply for timber through the territorial forestry office if their community forest cannot supply their needs. The process through the territorial forestry system can be time consuming (see Box 6). The fact that they now have "ownership" over their resources is often mentioned as the motivation by a community to establish a community forest (in the strict sense, the legal ownership is still with the Government, as only the access, management, and use rights are handed over).

[3] *A hammer stamp is a marker that provides information that allows for the tracking of timber resources.*

Box 6: Statement on process of obtaining permits

Obtaining permits for timber and fuelwood from the Department of Forests is time consuming. Visits to the Range Office and then to the District Forest Office may take more than two months. Establishment of community forests has reduced this lengthy process; now we can get these products easily from our community forest without delay.

Source: CFMG member of Shambayung Community Forest, Tang, Bumthang, 2006.

As found by Wangdi and Tshering (2006), communities can get the wood they require from the nearby community forest simply by using a local permit issued by CFMG executive committee members. This is in contrast to the lengthy time taken to get a permit from the Territorial Forest Division (TFD) prior to the establishment of a community forest, averaging two to four months.

If the community has more resources than they need for their own consumption, it has the right to sell the surplus outside its group, though a royalty must be paid to the Government according to provisions in the FNCR. To date, only a few community forests (Shambayung and Masangdaza) have the potential to sell their excess timber resources. With improved silvicultural management, the potential of selling timber from community forests will increase and ultimately generate significant monetary returns to the communities involved in the CF Program (E. Oberholzer, pers. comm. 2006).

Communities are harvesting timber very conservatively from their community forests. Therefore, as capacity increases and the quality of the resources improve, there is a greater potential for direct economic benefits from community forests by optimizing the harvesting of timber. The danger from over-harvesting is limited, as the management plans are based on sustainable forest management principles and the activities are closely monitored by the Forestry Services.

In addition to the income from the sale of timber, NTFPs can generate income for the community (see Box 7).

Box 7: Example of income generation from NWFP

The Drametse Community Forest has generated Nu. 53,841 (about US$ 1,200) for the community from lemon grass distillation fees.

Source: Wangdi and Tshering 2006.

The CF Program has not focused much on NTFPs thus far, but it will become increasingly important. Pfund and Robinson (2005) indicate that the potential benefits from NTFPs may be large, particularly through local value-added activities. They also state that NTFP collection is currently based on traditional practices and local markets, but with an additional focus on quality and product development it can generate greater income for communities.

Another income stimulating activity is the establishment of community funds. These funds often start as saving funds, but increasingly the proceeds from fines, sales and gifts contribute to the funds. A total of US$ 12,150 has been collected by CFMGs since their establishment in 2000. Many CFMGs use their funds for small credit and loan services to their members, and

to pay operational costs to manage the community forest areas. Data indicate that limited investments are being made by the communities for forest activities, which suggests that communities are willing to invest in and increase the value of their community forests.

Microfinance helps rural households to plan and manage consumption and investments, cope with risks, and improve their living conditions. Saving schemes such as the community funds are normally the major source of such finance before other microfinance schemes are explored and implemented (FAO 2005).

Besides income-generating activities from community forestry, the establishment of a CFMG with by-laws enables the community to better organize themselves for the overall benefit of the community. As an organized group, they can better express themselves in the Block Development Committee , defend their rights and better express their priorities. It has been observed that the CFMGs are also now discussing issues other than community forests.

Also, out of the 36 approved community forests, 28 have at least one objective stated in their community forest management plan related to the improvement of their communities' livelihoods. Community forest areas which do not mention this in their objectives were established for the protection of water resources and other surroundings natural resources (this is generally true with the earlier established community forests).

From the sale of timber and NTFPs, and the establishment of CFMG funds, the CF Program has the potential to significantly improve rural life. Given that the CF Program has the potential to reach 69% of the population, it can make a considerable contribution toward achieving the first MDG in Bhutan.

Sustaining wood supply from community forests

Sustaining the supply of rural house-building timber and firewood for the citizens of the country has been a priority concern of the RGoB. The CF Program was primarily developed to secure and augment wood supplies in the rural communities through sustainable utilization and diligent protection of forest resources (DoF 2003). Timber and firewood are the most important forest products within most CFMGs, and DoF forest field staff ensures proper guidance to effectively manage the community forests to ensure these resources are properly managed and available on a sustainable basis.

Research by Phuntsho and Sangay (2006) reveals that the needs for construction timber in the five studied CFMGs often cannot be met by the available resources within their community forest. More than half (53.1%) of the interviewees responded that their community forests can meet the needs of the community, while the rest (46.9%) said their community forests cannot meet needs. This is a common scenario with most of the community forests that have been established. As the timber supply varies from one community forest to another, the requirement for construction timber for many CFMGs needs to be either fully supplied or partially supplemented by the Government Reserved Forests (GRF). Lack of preferred wood species in the community forests is an additional reason for not being able to meet the identified timber requirement of CFMGs.

Other aspects

According to Wangdi and Tshering (2006), communities have more awareness and understanding of forest acts, rules, regulations and the purpose of protecting and managing forests when community forests are established. They are concerned about their ownership rights over community forests, especially the threat of the Government repossessing their allocated forest resources by way of changes in the forest acts, rules, and regulations in the future. However, after empowerment in forest management and protection, the rural communities have benefited socially, economically, and environmentally.

Social impacts

Wangdi and Tshering (2006) found that the establishment of community forests has had a positive impact on community livelihoods through ownership and stronger empowerment, increased community participation, decreased conflict among members and the establishment of local institutions.

Economic impacts

The economic impacts of community forests that have been studied are generally positive, but variable (Wangdi and Tshering 2006). CFMGs have still not derived the maximum economic benefit from their community forests, despite sound management planning and practices. For example, the timber harvested from the Yakpugang and Masangdaza community forests is well below the annual harvesting limits, while no timber has been harvested from the Dozam community forest because of its limited capacity to supply wood for another ten years.

Future trends

The CF Program initially focused on the timber resources in community forest areas and preparation of management plans. A community forestry manual was produced to improve the quality of the management plans (including the maps and annual harvesting limits). Recent attention is being given to the potential value of NTFPs from community forests. At the same time, the importance of building the capacity of CFMGs in record keeping, reporting, and silvicultural and managerial skills has been identified as pressing priorities.

Better use of NTFPs will provide additional economic benefits to communities, especially if the business skills and product development capacity of the communities can be improved. But, as stated in Pfund and Robinson (2005), the social contribution of NTFPs and the potential for poverty alleviation must be better integrated with priority policies at the national level.

Conclusion

The CF Program is increasingly contributing to forest and environmental conservation through the active involvement of rural people. Silvicultural activities are improving forest conditions, degraded or barren land is being planted with a variety of species, and headwaters are being protected. The willingness of CFMGs to invest both cash and labor to improve their community forests show that the CF Program is supporting overall national forestry policy, and will not be a threat to the specific policy directive of maintaining 60% forest cover. In addition to conserving and improving forest conditions and livelihoods of rural communities, the CF Program is also supporting Bhutan's commitment to the MDGs.

Given the above, the DoF should continue to support the CF Program and actively stimulate the up-scaling of its implementation. The DoF should be more flexible in implementing the CF Program, enacting rules that allow communities to benefit economically by streamlining the sale of timber and NTFPs. Community forestry is already contributing to the livelihoods of Bhutan's rural communities through sales of timber and NTFPs, but could contribute substantially more in the future.

The DoF could look at options for CFMGs to supply greater amounts of timber to the domestic market by initiating pilots where CFMGs could sell timber without first having to supply their own demands, based on the justification that the communities can increase their overall net income.

By potentially reaching 69% of the total population, the CF Program has an excellent opportunity to contribute to local economies through saving schemes, the sale of forest products, and the establishment of small businesses, while also contributing socially through improved decentralization and democratization. An added benefit of the Community Forestry Program is improved environmental conservation and the sustainable use of forest resources. These benefits should be further stimulated through up-scaling and refining the policies on community forestry development and building the capacity of the existing CFMGs in various fields.

Recognizing the potential of the CF Program, it is crucial that Divisional Forest Officers (DFOs) identify potential community forest areas in the various Geogs. Continual efforts are needed to create awareness of existing policies and benefits of the program before the 10th five-year plan is prepared, and a clear action plan to promote better resource allocation should be proposed for further implementation. Also, capacity building of CFMGs must be identified in the action plan as important for the sustainable use of forest resources and improvement of community livelihoods.

Meeting the wood requirements of CFMGs from the allocated community forests is a challenge; therefore, it is still premature to phase out the supply of wood under the Kidu system for all community forests. The capacity of existing community forests to meet the construction timber demands of the CFMGs differs from one area to another due to different forest types and conditions. Timber deficits from the community forests are currently being met by the Government Reserved Forest.

The CF Program is in its infancy, with less than a decade of implementation experience in the field. In the early stages of its implementation, there was skepticism among policy makers and key officials in the Government regarding the capability of CFMGs to effectively manage their community forests. As the CFMGs are currently managing their community forests in a sustainable manner according to the existing management plans, this initial skepticism seems unwarranted. The CFMGs harbor a fear that the current system of access to rural timber supply will be restricted once their community forests are fully functional, but so far access to the Government Reserved Forests is continuing in situations where the community forest does not provide sufficient timber.

Community forestry has a positive impact on the social, economic, and environmental aspects of rural life. Community members have strengthened social relationships as they work together to improve forest cover and maintain catchments by planting valuable tree species and protecting them. At this stage, benefit sharing among the CFMG members is minimal due to the fact that CFMG members have harvested only limited amounts of timber from their community forests, most of which has been used to meet domestic needs. However, CFMG members are positively inclined towards future community forest management because of the

clear social and environmental benefits and the potential for increased cash income in the future through the sale of excess products outside the community.

To expand and increase the benefits of community forestry for the purpose of rural livelihood development and poverty alleviation, extension services should be strengthened so that communities and government agents are more aware of the potential of community forestry in rural areas. Further, the Government should provide increased support to rural communities to promote participation in the CF Program, as it has a direct positive impact on rural livelihoods.

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12

Sharing the wealth? A case study of a pioneering community-based timber harvesting operation in Central Viet Nam

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Introduction

This paper presents a case study of a pioneering community forestry initiative in the province of Thua Thien Hue, in the North Central region of Viet Nam. The case was innovative because the model for sustainable management of this forest, developed by the Ministry for Agriculture and Rural Development (MARD) through UNDP's Program for Forests (PROFOR), involved the harvesting of timber for sale and domestic use by the community in return

for protecting the forest. This was the first example of timber harvesting in Viet Nam's Community Forestry Program [1].

Most forest land allocations in Viet Nam have been made to individual households. This case is, therefore, also unusual and bold, because the forest area, part of a highland critical protection forest, was allocated as a single 405 ha block to an entire village before there was a legal basis for doing so.

The case is important because, according to national policy, forest land allocations and subsequent community-based management are supposed to be major tools in sustainable forestry and the alleviation of poverty. This case study provides an opportunity to assess the extent to which a community forestry model is succeeding in achieving these two objectives.

This paper describes the Thuy Yen Thuong community forestry model, including the process of forest land allocation, management planning, timber harvesting and benefit distribution, and a preliminary assessment of these with regard to sustainability, participation, benefit sharing and poverty alleviation.

Community forest allocation justification

The allocation of Thuy Yen Thuong's forest to the local community was facilitated and funded by UNDP's Program for Forests (PROFOR). The main objective of the allocation was to establish a working community forest from which policy recommendations could be drawn.

In Thuy Yen Thuong, poverty was identified as the major incentive behind illegal logging operations. Commune and forestry officials hoped that community tenure over the forest area would provide motivation for local residents to protect the forest in the long term. Three principles were set for the trial:

- Existing natural forests should be managed in a sustainable way.
- The forests should provide benefits to the local people, thus contributing to the national goals of hunger elimination and poverty alleviation.
- The cost to the State should not exceed that of Forest Protection Contracts (VND 50,000 or approximately US$ 675 per ha per year) (Vu Hoai Minh and Warfvinge 2002).

From the beginning, the Forest Protection Unit (FPU), as the local implementing agency, was committed to including commercial timber production as a central part of the community forest management operations.

The management agreement

A management agreement between the community and the Government for 405 ha of forest was officially signed in December 2000. The process for reaching this agreement began with a socio-economic survey, followed by a village meeting in which the FPU informed villagers of the preliminary plan and asked their opinions. Villagers were given three choices for moving forward:

[1] *In the last three years, a few other communities have also harvested timber from their forests.*

- Continue with existing forest protection contracts;
- Divide the forest area considered for allocation among individual households; or
- Arrange for collective management by the entire village.

The community opted for the third alternative (Vu and Warfvinge 2002).

The FPU then surveyed and inventoried the forest area and prepared a map and report (Vu 2000). Out of the total 1,966 ha of natural forest in the village territory, a 405 ha block at the top of the watershed was selected by the FPU as suitable for allocation, based on its standing volume. It had an average volume of 76 m^3 per ha, consisting mainly of *Desmos*, *Eugenta* and *Parashorea* spp. These species are not high-quality timbers, but are in common use locally for house construction. The inventory did not specify size or class distributions of these species, or give their spatial distribution across the forest. To calculate the allowable cut, it is necessary to know the growth rate of these species. It was impossible to measure this in a one-off inventory as conducted. Instead, the FPU used a national formula for determining harvesting rates (see Table 1) and estimated the overall forest growth rate at 1.5 m^3 per ha per year, which was the highest option available for calculating growth rates. The method for obtaining this estimate is unclear, as the inventory does not appear to have been sufficiently detailed to guide subsequent management of the forest, and it appears that the national system for determining harvest rates needs to be re-examined.

The FPU, in consultation with commune and village level officials, then drafted the management agreement that identified the forest, defined the duration of the agreement, and set out the rights and responsibilities of the villagers. A further village meeting was held for approval of this draft agreement.

The management agreement included an outline for a "village convention," the internal rules and regulations for forest protection, the details of which the community was expected to develop independently. The Village Management Board (VMB) prepared handwritten conventions for approval by the wider community, but it is unclear how widely this document was disseminated. They included provision to create a community fund to manage the forest revenues on behalf of the whole community.

The initial period of the management agreement was three years. However, it stipulated that if the agreement was carried out well during that time, it would be extended into a 50-year lease. The FPU was clear that the agreement needed to be long term in duration to work effectively.

Objectives

The management agreement states that, "Everyone in the village…is entitled to the benefits brought by forest protection and growth." Essentially, cash-based forest protection contracts would no longer be issued, but the community would be rewarded for protecting the forest by granting access to controlled harvesting of timber, NTFPs and wildlife.

Organization and decision making

Under the management agreement, overall responsibility for the community forest was given to the VMB. Thuy Yen Thuong's VMB consists of the village head and two deputies, and was appointed when the village was formed in 1999. The village is further divided into 10 sub-units, each of which elected their own representative to report to the VMB. The management agreement also required the formation of a Forest Protection Team (FPT), comprised of the heads and deputy heads from each of the 10 VMB sub-units, plus one staff member of the FPU sub-station based in the village.

Information and issues about the community forest are discussed at meetings of the VMB, which are open to all interested villagers. Village sub-unit leaders represent the views of their constituents at these meetings, but decision-making powers rest solely with the three-member VMB.

Protection

In the management agreement the FPT undertakes to organize monthly forest patrols. PROFOR funded the costs of the patrol team, at the rate of US$ 1.50 per person-day, until the project phased out in 2002. Since then, the village has covered these expenses out of their group fund. Patrols are recorded in a log book, including the names of all patrol team members and reports of any illegal activities, including details on related evidence. The FPT has no other formal duties and there is no other body at village level which is exclusively concerned with forestry matters.

NTFPs and timber

Under the management agreement, extraction of timber or NTFPs from the community forest would be subject to approval from the relevant authorities on a case-by-case basis. However, as noted above, the village conventions allow households unrestricted access to the community forest area for collection of NTFPs. There are no records of these collection activities, chiefly because the villagers assume that the total amounts collected are small and of little monetary value.

Timber production

The community's entitlement to timber was designed to reward villagers for successful forest protection. The faster the forest grows the greater the proportion of volume increment the villagers can extract (see Table 1). The entitlements are based on the initial volume of 76 m^3 per ha, as measured in the community forest inventory of 2000.

Table 1: Timber extraction entitlement for Thuy Yen Thuong community forest

Mean annual increment (m^3/ha)	≥ 1.5	1-1.5	0.5-1	≤ 0.5	No growth
Village's entitlement (% of total increment)	50	30	20	10	State takes back forest

Timber harvesting operations

The timing of timber harvesting operations, according to the management agreement, depends on the length of time for the forest to reach "maturity." Again, the criteria by which maturity is to be assessed, or by whom the assessment will be made, are not defined in the agreement. The agreement assumes that maturity will not be reached in the first 10 years after forest allocation. During this initial period the agreement allows for 50 m^3 to be selectively cut annually to meet the "urgent needs of the local people."

Harvesting application and approval process

It was under this latter provision that the village applied for permission to harvest timber in 2004. PROFOR had supported the initial inventory of the forest in 2000, which was supervised by the Forest Inventory and Planning Institute (FIPI) of Thua Thien Hue province with the participation of villagers. When the villagers submitted their application for felling in 2003, FIPI used the data from the original inventory to identify a suitable location for the felling

operation: a 60ha block at the western edge of the community forest, about 3 hours walk from the village at an altitude of 800–1,000m. Three officials from FIPI were paid VND 2.7 million (US$ 169) to revisit this location to carry out a more detailed inventory, identify and measure the stems to be felled, and calculate the expected output volume of construction grade timber. A total of 31 suitable trees were identified, with a combined volume of 92 m^3. The Provincial People's Committee (PPC) approved the harvesting operation.

Timber harvest

The VMB then invited applications for community members to join the felling team. Members were selected according to their physical fitness and experience in timber harvesting. A total of 31 men were selected and organized into 8 groups for the duration of the work. The team leader was a member of the forest protection team and was responsible, along with the VMB, to monitor the work and ensure compliance with the harvesting plan.

Trees were felled with hand saws and axes, and conversion was performed on-site. Extraction was also manual, down a steep gradient. The prevailing soil in the area is extremely friable and prone to rockslides, further complicating an already difficult harvesting and extraction process. The converted timber was stored at the forest protection station in the village pending sale and distribution.

The harvesting operation took three months to complete, during which 28 trees were harvested with a total round timber volume of 79 m^3 (sawn volume of 53 m^3). After a final inspection by the VMB, the felling area was closed to the logging team and all villagers. No members of the community were permitted to return to the area to collect firewood or other by-products of the operation.

Benefits and benefit sharing

Total income

The VMB set a price of VND 2.3 million (US$ 140) per m^3 for the timber, generating a total income of about US$ 7,300 from its sale. Enquiries with local timber traders and carpenters confirm that this price was considerably lower than the prevailing market price for timber of this species and quality. The price for timber with official government stamp (15% district resource tax paid) was about VND 3.5 million (US$ 220) per m^3 in 2004. However, the timber from Thuy Yen Thuong was exempt from duty because it was only approved for sale within the village boundaries. The price for untaxed timber is more variable and difficult to establish, but was about VND 3 million (US$ 175) at the time. The sale could, therefore, have generated revenues of US$ 9,000–10,000. The discount was supposed to enable villagers to benefit from cheaper timber but, as discussed below, had a serious negative impact on the profitability of the community scheme.

Direct beneficiaries

As there was a limited timber harvest, due to restrictions within the management plan, benefits experienced by the community were somewhat limited. However, benefits were experienced and distributed within the community among different identified groups as follows.

Forest protection team

Forest protection was included under the VMB's expenditure for the harvesting operation. The patrols were covered by PROFOR, until the project phased out in 2002, at the rate of VND

25,000 (approximately US$ 2) per person-day. Payment for the patrol teams was later funded directly from harvesting revenue deposited into the Community Forestry Fund.

Harvesting team

The village convention, drawn up by the VMB, established that most of the benefits would go to those who did the logging. The VMB set the labor cost of the felling operation at VND 1.7 million (US$ 106) per m^3, or 74% of the final selling price – a sum significantly above the prevailing rate for timber harvesting. Had the total income been shared equally across the whole community, the average benefit would have been approximately US$ 20 per household.

Community Forestry Fund

The Community Forestry Fund received proceeds of the timber harvest after deduction of expenses, the full details of which are set out in Table 2 below. The table also provides an overview of other direct beneficiaries from the timber harvest.

Table 2: Harvesting costs and net income

Expense	No of units	Unit cost	Total(US$)
Felling and extraction	52.9 m^3	US$ 106 per m^3	5,621
Monitoring and inspection	NA	NA	155
Harvesting design	9 person-days	< US$ 20/day	169
Forest protection 2003-4	88 person-days	US$ 1.57	138
Felling Ceremony			50
TOTAL costs			6,133
Total income			7,512
Net income to CFF			**1,379**

The net income from the harvesting operation, deposited in the CFF, was VND 19.2 million (about US$ 1,300), or just 17.5% of the gross income. The Community Forestry Fund is administered by the VMB, and is meant to be used for the benefit of the whole community. Its use was discussed in village meetings, led by the VMB. Priority was given to the construction of a village gate, at a cost of VND 9.4 million (about US$ 600). The contract for this work was given to four artisans from the community. The gate has little practical value, but enables the community to be granted the title of "cultural village," which conveys honor and status, particularly to the VMB. About US$ 450 was spent on paying the forest protection team for their work since June 2004, and US$ 50 covered the cost of a ceremony before the timber harvest began. A balance of US$ 100 remained in August 2006.

Management of timber benefits

Before the harvesting operation, the VMB devised a system for pricing and prioritizing the sale and distribution of timber that became part of the village conventions. The price was set below the existing market rate, at VND 2.3 million per m^3 (US$ 144, compared with the market price of US$ 175–220 per m^3). A limit of 0.5 m^3 per household was set for house repairs and extensions, rising to an available amount of 1 m^3 if the buyer required the timber for constructing a new house. A maximum of 40% of the total output was reserved for "social policy privileged" households (households at risk of poverty or with few income-earning

individuals due to sickness, disability or war casualties) and households active in forest protection activities. These households were also entitled to select the best quality timber after harvest, and were offered a reduced rate of VND 2.16 million (US$ 135) per m^3. However, only 12 households from each of these two categories availed themselves of this entitlement, reserving a total volume of 10.5 m^3.

According to the village conventions, a further 30% of the total output could be reserved in advance by other villagers who submitted applications that include a full account of their intended use for the timber. The VMB approved requests for timber on a first-come, first-served basis, if satisfied that the buyer would use the timber as intended and not sell it on to a third party. Buyers were required to pay 30% of the price in advance. The full list of households with reserved timber under both these quotas was announced at a village meeting prior to the harvest operation. After the timber harvest was complete and all reserved timber had been distributed, the remaining timber was sold to villagers on a first-come, first-served basis, and finally to carpenters within the village boundaries with no limit on the volume purchased. This system resulted in a pattern of timber distribution and revenue as set out in Table 3.

Table 3: Timber sales and revenue within Thuy Yen Thuong village

Purchaser category	Volume purchased (m^3)	% of total volume	Unit price (US$ per m^3)	Total revenue (US$)
Social policy privileged	5.9	11.1	135	797
Protection team	4.6	8.7	135	621
Other villagers	17.2	32.5	144	2,473
Carpenters	25.2	47.6	144	3,623
TOTAL	52.9			7,512

Assessment of the community forestry model

The following is an overarching assessment of the Thuy Yen Thuong CF model. The areas of focus are those which link directly to community empowerment, livelihoods development and poverty alleviation.

Awareness, participation and decision making

Members of the Village Management Board and their close comrades had existing special interests in logging, so this pilot ended up reflecting and promoting these interests by working through them.

In Thuy Yen Thuong, awareness about the forest allocation and harvesting processes differs significantly among individuals. These differences were revealed through questioning of a small sample of villagers about the details of the allocation process described above, the management structure of the community forest, the planning and implementation of the harvesting operation and the distribution of timber and other benefits after the operation.

As expected, members of the VMB, the forest protection team and the felling team provided full and accurate information regarding all of these processes, and were primary sources for much of the information provided in this paper. A village-level representative of the Women's Union was also well-informed.

Households which were not directly involved in forest protection, harvesting or local administration demonstrated very poor awareness of community forest issues. The majority were not aware that the community forest existed, including one widow from the "social policy privileged" list who had bought 0.36 m^3 of timber from the harvesting operation. All men interviewed were aware that the felling had been carried out in 2004, but most could not describe the processes. A majority of women were unaware of the felling operation.

There are three causes of the lack of awareness encountered during the interviews. For the relatively well-off, apathy was the paramount cause. They had the opportunity to learn more about the community forest, but did not consider it worthwhile.

Other informants felt that they had no right to be consulted on forestry matters, and some male villagers would not attend a village meeting without a specific invitation. All the women we spoke to, with the exception of the Women's Union representative, said that forestry was exclusively men's business.

The poorer individuals, however, were keen to learn about community forest issues and their lack of awareness was chiefly due to inadequate information dissemination. It is the responsibility of village sub-unit representatives to relay information from meetings, which is typically done by word of mouth and largely depends on an individual's relationship with their leaders.

Apart from those households directly involved in forest protection, community members were not aware of their responsibility to participate in forest protection or of their entitlement to the benefits brought by protection. Many villagers were aware of the payment of VND 50,000 (US$ 3) per ha per year paid by the government through forest protection contracts for patrolling forest areas planted under the 5 Million Hectares Program (Program 661), but did not realize that this did not apply to the community forest area. Under the management agreement prepared by Phu Loc FPU, villagers have the right to collect NTFPs from the community forest, but these rights are not explicitly reflected in the village conventions prepared by the VMB. The process of timber distribution and the prices involved were only known to those who had purchased timber.

Few people knew about the Community Forest Fund, and few of those who did were aware that they should be consulted on its use. Everyone knew about the village gate, but no one outside the protection team and local administration was aware that it was paid for from the Community Forest Fund. The local Women's Union representative revealed that the VMB has already decided, with full consultation of villagers, to spend income from the next harvesting operation on construction of a village meeting hall. No other interviewees corroborated this information.

This generalized lack of awareness resulted in low levels of community member participation, with only 30 people involved in the timber harvest and 11 in forest patrols, while the entire community consists of 370 households. The forest inventory and preparation of the felling plan were not participatory. Rather, FIPI did the work, and involved villagers only as laborers. There was no training or empowerment of local people in sustainable forestry. Participation in the timber harvest was wider, but most of the felling team had previously been involved in illegal logging. Size of household, and the availability of fit individuals to provide labor for the operation, also limited the ability of poor households to participate.

The VMB was assigned responsibility by the Commune People's Committee (CPC) for all decision-making processes concerning community forestry, without requiring wider consultation within the village. Similarly, the forest protection team was composed of individuals with established positions in the local administration, such as sub-unit heads and

deputy heads. The management agreement was drafted by Phu Loc FPU in consultation with the VMB and discussed at village meetings where mass organization representatives and sub-unit heads were present. Most of the decisions benefited the decision makers. By opting for a community forest, the loggers obtained access to a larger area of forest than they would have received under individual household allocations. The decision to award the majority of benefits to the people who did the work obviously favored the loggers. Setting a low purchase price enabled these people to save money on their own wood needs, and make a margin by selling excess wood they did not use.

The system of prioritization, sale and distribution of timber was set by the VMB. Apart from VMB members, only the Women's Union representative asserted that the decision-making process for mobilization of the community forest fund had been carried out with full participation of the villagers, although she had not participated herself.

Evidently, certain community members gained two ways: through direct employment in forest felling and protection patrols, and indirectly as recipients of discounted timber. In a community of 370 households, less than 10% benefited substantially from the forest operations. And it was those people that devised the benefit-sharing scheme who were the main beneficiaries of the community forest harvesting operation. They were, for the most part, the same people who had been responsible for illegal logging in the village in the first place.

Impacts of the timber harvest on the forest

As a pioneering example of community-based timber harvesting in Viet Nam, Thuy Yen Thuong community forest demonstrates that such operations can potentially generate revenue for the community through harvesting of timber. In this instance the operation was low intensity (28 stems over 60 ha), well-implemented and seems to have had a low impact on the forest ecosystem.

The fact that this logging was legal conferred significant advantages. Members of the logging team admitted that during previous illegal operations, their main concern was felling quickly to avoid detection, so there was no planning or effort to limit damage to the forest. The physical evidence of the 2004 operation shows that it was carried out carefully. Stems of commercial value remain in the forest and two years after logging, advance regeneration appears healthy.

However, because of the incomplete inventory and lack of species growth models, it is not possible to assess the frequency at which such operations would be sustainable. No comprehensive long-term management plan exists, which could be assessed against sustainable management criteria. There were no post-harvest or other treatments to encourage regeneration and increase the value of the forest. As yet, no attention has been paid to non-timber products in the forest. Participants are interested only in harvesting the timber resource, and complain that even logging will not return the perceived costs of forest protection.

Impacts of the harvesting operation on poverty alleviation

Poverty alleviation was one of the stated objectives of the management agreement. The impact assessment provided here is preliminary in terms of total income, the equity of its distribution and its use to help the poor of the village.

Income and the discounted timber price

The total and net income to the community fund were significantly less than the potential income due to the discounted price set by the VMB. If all the timber was sold at a rate of US$ 175 per m^3 (more consistent with prevailing market prices), this would have resulted in a 27% increase in gross revenue (US$ 9,275), and (assuming expenses were constant), more than double the net revenue deposited in the Community Forestry Fund. By this measure, the net benefits to the community were disappointing.

The discounted price of timber was cited by several interviewees as one of the primary benefits of community-managed harvesting. However, aside from resulting in a 60–80% reduction in net communal revenue, the discounts represented a hidden subsidy favoring wealthier members of the community at the expense of the poor.

By the official definition of poverty, the 60 households of the village which are classified as poor earn less than US$ 11 per month. At the discounted rate of US$ 130 per m^3, even 0.25 m^3 (the smallest amount purchased by one household) is clearly unaffordable. Data were not available on the exact circumstances of the 12 "social policy privileged" households which purchased timber, but it seems likely that they were on the list for reasons other than poverty. Most interviewees, regardless of wealth status, acknowledged this as an evident problem in the current benefit-distribution strategy.

Employment

The community forest allocation and harvesting process contributed to the village economy through generation of employment in forest protection and forest felling teams but, since these jobs went to better-off households, it did not contribute substantially to poverty alleviation. The forest protection team carried out patrols only once or twice per month, but this could still have provided a significant increase to a poor household's income. In addition to a daily remuneration for their protection work, these individuals also received a 5% discount on timber, constituting a further distortion in benefit distribution to the detriment of poorer households.

Selection for work in the felling team was essentially dependent on past involvement in illegal logging operations. Though this resulted in employment for some households not directly involved in village administration, none of these households were among the 60 poorest. The rate of pay, determined by the VMB, was at least 4 times the norm and enabled direct capture by this select group of 74% of the revenue from the harvesting operation. To this was added wages for forest patrols and discounted timber, so overall the local elite must have captured well over 80% of the value of the timber. The jobs created did not contribute to the objective of poverty alleviation in the village, and essentially rewarded those households that were relatively well off for their involvement in past illegal activities.

Community Forestry Fund mobilization

Since poorer households did not benefit from the discounted timber or employment, the only way possible for benefits to accrue to them was through the Community Forestry Fund. The discounts enjoyed by the better-off, therefore, resulted in a 60% reduction in the benefits available to the poor, resulting in an entirely inequitable distribution of revenue.

The Community Forestry Fund was spent without wide consultation to identify the priorities of the poorer members of the community or to discuss other options for use of the money. Nearly 50% of the money was spent on a village gate which serves no practical purpose, except perhaps to confer elevated status on village leaders through the inauguration of Thuy Yen Thuong as a "cultural village."

Conclusions and recommendations

The Thuy Yen Thuong pilot project has been an innovative and bold step in Viet Nam's community forestry efforts. Through this project, a group of forest users has been assisted to organize, plan and obtain a community forest, and harvest some timber from it in return for protecting it from further degradation. The pilot is well-documented, which has been extremely valuable in providing the opportunity to review the experience and learn lessons. The review reveals two main areas of concern for the Thuy Yen Thuong community forest: sustainability and internal governance.

Sustainability

Management planning

The pilot has not paid sufficient attention to either the ecological or economic sustainability of forest operations. The inventory conducted was not sufficiently extensive or detailed to establish the sustainable rate of harvesting. A management plan was not prepared, and no attention appears to have been paid to assessing and enhancing the economic value of the forest through post-harvest treatments, enrichment planting and management of NTFPs. Without adequate and sustainable economic benefits, the community will have no interest in managing its forest. It is clear, however, that the information on timber species ecology and growth rates needed to manage these forests either does not exist or has not been compiled and made accessible to managers.

Recommendations: The preparation of an integrated and sustainable forest management plan, based on a comprehensive inventory and certified by the FPU or other accredited professional body, should be a pre-condition for forest allocation. This will clarify the benefits available to the community and will also eliminate the need for lengthy approval procedures. Compilation or development of the growth models necessary for management planning in natural forests should be a research priority for the forestry sector.

Internal governance

Local governance structures

The Thuy Yen Thuong forest is a "community forest" in name only, as 90% of the households have not heard of, participated in, or benefited from it, and its poverty alleviation objectives have not been met. The main reason for this has been the over-reliance on existing local governance structures. VMBs, with their system of sub-village units, are set up less as consultative bodies and local democratic fora, and more as channels for top-down communication. This study has shown that even as a communication channel, the VMB does not function effectively, particularly when there is an opportunity for them to capture valuable resources. Broad-based discussion and debate at village level are needed to ensure that community forestry addresses the needs of the whole community, particularly the poor.

Recommendations: Representative village-level community forest committees (CFCs), accountable to the community and to the VMB (but independent from it), shall be established. The members of such a committee, responsible for decisions regarding forest management and benefit distribution, must also be selected by a ballot of community members and subject to regular performance appraisals. Further research on the internal governance of such groups would help promote the interests of the poor and constrain elite capture.

Discounts and premiums

The VMB strategy of paying the loggers at a premium, and then selling the timber at a discount, meant that the total income generated by the timber harvest, and the amount finally reaching the Community Forestry Fund, were disappointing.

Recommendations: Timber should be sold at or near to full market price in order to generate income for poverty-focused interventions. Discounts of high-value products will always favor wealthier households at the expense of the poor. Subsidies should be discouraged, but, if used, should be applicable exclusively to poor households. Labor should be compensated at competitive local rates, and wherever possible, jobs should go preferentially, to poorer households.

Fund management

The Community Forestry Fund was not used for poverty alleviation. Had prior external appraisal been made of the planned use of the fund against poverty-focused criteria, this might not have happened.

Recommendations: Community fund managers should receive training prior to assuming responsibility for the fund, and should receive ongoing support from facilitators in the first years of operation to ensure its wise use. In order to avoid elite capture of communal resources, external monitoring by an independent, neutral body is helpful. However, the need for such assessments would be much reduced if participation of poor households in decision-making procedures was adequately facilitated.

Final word

This brief study represents the first analysis on the subject of community forest harvesting in Viet Nam. There is room, and need, for further study. The pioneering and innovative activity in Thuy Yen Thuong holds many important lessons for the future of Viet Nam's Community Forestry Program. It is essential that these lessons be thoroughly studied and heeded for the national program to achieve its potential in terms of poverty alleviation. This is the recommendation that must be emphasized above all others.

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