# Small scale wood based entreprises in community forestry: contribution to poverty reduction

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Nepal is promoting community-based forest management approach known as Community Forestry (CF) as a promising option to reduce environmental degradation and to fulfill the demands of basic forestry products of rural people. There are emerging concerns that whether community forestry can be used effectively to generate income and employment to help improve the livelihoods of the poor.

The paper is based on furniture and agricultural implements production enterprises from Parbat and Myagdi districts of western mid hills of Nepal. The furniture enterprise has earned USD 10,000 and the agricultural implement enterprise has earned USD 2000 during the past two years. The paper presents the process and approaches, production and market characteristics, present status and future prospects, role of development agencies and service providers, socio-economic impacts, lesson learned and policy implications from these case studies. The paper discusses that forest management should not be considered in isolation but should be linked with existing livelihoods opportunities and farming systems promoting the use of local materials and focused to provide employment to poor and vulnerable group.

#### Key words: community forestry, enterprises, wood, poverty, Nepal

The main forest management strategy of Nepal is based on people's participation, which is known as Community Forestry (CF). Under the CF arrangement, local people make decisions regarding the forest management, utilization and distribution of benefits from a forest; they are organized as a Community Forest User Group (CFUGs).

The primary motive for stimulating CF is its potential contribution to provide basic forestry products such as firewood, forage to rural people, to improve their livelihoods and to preserve the hills of Nepal from further degradation (Acharya 2002; McNeely 2002; Malla 2000; Hobley 1996; Jackson and Ingles 1994; Gilmour and Fisher 1991).

With the advancement of CF, it has been increasingly realised as an attainable mechanism that can contribute to reduce poverty in Nepal (Kanel 2004; NPC 2002; Gentle 2000). However, the extent of the role that forest plays in reducing poverty is dubious (Anglesen and Wunder 2003). On the other hand, Arnold (1998) argued that outputs from community forests can make to livelihoods outcomes through increased income, increased well being, reduced vulnerability and more sustainable use of natural resource base. Nevertheless, in Nepalese context, CF can be regarded as a key intervention to reduce poverty specially in rural areas.

#### **CF** and Forest Based Enterprises

The CF policy of Nepal is regarded as progressive to establish rights of local people over the resources; however, promotion of forest-based enterprises is limited. Recently, there has been a tendency within the CFUGs to initiate pro-poor activities to establish CF as a pro-poor program. The main arenas of interventions include promotion of income generation activities and concession in forest products distribution. The income generation activities include activities such as domestication of non-timber forest products (NTFPs), support to livestock, and establishment of Forest Based Small Scale Enterprises (FBSSEs). Recent inclination of the FBSSEs is towards the promotion of non-timber forest products domestication, establishment and management of such enterprises (Subedi 2006; Binayee et al. 2004: Kandel and Subedi 2004; MFSC 2004; Subedi et al. 2002; Kanel 2000; Wollenberg and

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Ingles 1998; Edwards 1996). Subedi *et al* (2002) argued that forest based enterprises have the potential to contribute to better management of natural resources, provide income and employment opportunities to poor and disadvantaged groups.

The development of small scale enterprises based on local resources and skills could be a good option to pick up the poor out of poverty and for generating income and employment at household level in shortest period. Subedi (2006) assumed that enterprise-oriented community forest management can generate positive outcomes on both conservation and local livelihoods.

Recently, Angelsen and Wunder (2003) have identified five areas for forest based poverty reduction initiation that require high priority attention where the second option is small scale wood processing enterprises, which is underrepresented in the forestry literature (Sunderlin *et al.* 2005). The present paper is intended to bring together information that is available from two wood based FBSSEs and to examine their impacts on forest management and livelihoods.

# **Case Studies**

The first case study is furniture enterprise located at Bharkhore CFUG in Parbat district. The second is Agricultural Implements Production Enterprise (AIPE) located in Ghorlas CFUG of Myagdi district.

# 1. Furniture Enterprise, Parbat

# Establishment

There were series of meetings and discussions in the Bharkhore CFUG to initiate activities that are directly related in improving the livelihoods of the poor. Five households selected were poor, having traditional skills and strong willingness. The CFUG formed a furniture sub-committee to implement the establishment furniture enterprise. The FECOFUN facilitated finding a donor. The bilateral donor -Livelihoods and Forestry Program agreed to support. The District Forest Office, Parbat facilitated the process. A business plan was prepared. The enterprise was established in the year 2004. Out of the total investment of NRs 57,800.00, Livelihoods and Forestry Program supported NRs 35,800.00 as nonrefundable grant. The CFUG provided cash assistance of NRs 10, 000.00 (without interest) and additional raw wood equivalent to NRs 6,000.00 to start the enterprise. NRs 6,000.00 (10 % of total) was invested by the entrepreneur households themselves.

# Products and production mechanism

The input materials used by the enterprise are round logs, saplings and poles. Four types of products are out puts from the enterprise. The main products are house construction materials and furniture. The owners of the enterprise are free to fix the price of the products or rate of the services. The average annual maintenance cost for the past two years is about NRs 20,000 including annual lease for land, electricity and workshop maintenance.

The average daily raw material consumption is 6-8cft. It varies from a minimum of 2 to a maximum of 20 cft/day. The past two years of data shows that a significant proportion of species processed are from outside the Bharkhore community forest either from adjoining CFs or from private lands. The use of main species and their quantity during the past two years was as: Sal (*Shorea robusta*) 30 %, Sallo (*Pinus roxburghi*) 40-50 %, Utis (*Alnus nepalensis*) 20 % and others (Chilaune- *Schima wallichi*, Katus - *Castonopsis spp*, and Sisso - *Dalbergia sissoo*) 10 %. Out of these, Sallo is not available in the CF.

# Employment and income

The enterprise has generated year around employment for four individuals (one each from three selected households) (two household selected were redundant to join the furniture) and one additional skilled employee outside the community. Since the establishment cost was supported as grant by the donor, the income is realized immediately and rises sharply. The monthly average income for the past 24 months was NRs 10,000.00 per households for three households after deducting the monthly payment of NR 6,000.00 to the outside employee. The total income from the furniture enterprise during the past two years is NRs 720 thousands.

#### Forest management and the enterprise

The forest is divided into five blocks and one block is harvested annually in rotation. The system allows steady supply of forest products to the users and ultimately to the enterprise. The harvesting mechanism such as sectioning of logs has been applied carefully so as to reduce wastage volume during the processing. The production from near by community forests and private farm also reaches to the furniture in a significant quantity.

#### Record keeping and monitoring

The record keeping system is very poor. There are only 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 maintain the proposed monitoring and enforce the regulations. In addition, the poor record keeping is also a result of weak literacy of the targeted households. The users generally believe that the enterprise is in profit and doing well.

#### Success and reasons

The furniture enterprise demonstrates multipartnership working modality to develop enterprise within the CF. The enterprise consists of five major stakeholders namely individual households organized in a sub-committee, Livelihoods and Forestry Program, the forest users, CFUG and the FECOFUN. The main reasons to explain it as a successful enterprise are the employment opportunities, earned income and saving and payment of the entrepreneurs' loan prior to the establishment of the furniture. It is based on local resources, skills and market. The main reasons for the success of the furniture enterprise are as follows:

- The selection of right enterprise and entrepreneurs: This could be measured by willingness, skills and traditional practices, and knowledge base on the enterprises.
- The location of the enterprise in district headquarter has resulted in an easy available market.
- The easy availability of raw materials from the CF and also buying facilities from the adjoining community forests and private farms.
- Growing market for furniture due to improved income correlated with the increased consumerism of local users. There has been shifting behavior of the users in utilizing consumption materials such as from mat to chairs.
- The locally available sawing facility with reduced wastage has motivated users to utilize small sized products for furniture purposes resulting in over all increased in furniture volume.
- Strong institutional support from the CFUG, FECOFUN and the donor.
- Finally, the low investment input from the entrepreneur helped reaching break even point early and benefits boosting motivation.

# 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 for commercial production of agricultural implements. A simple informal business plan was developed describing involving households, demand supply situation, market and cost estimation and formation of sub-committee. The plan states that resources, market and skill are available at locally but lack is the innovation. The DFO and the Livelihoods and Forestry Program supported the move. A sum of NRs 3600.00 was supported to each household to purchase tools. In general, the cost for a one set (axe, saw, sharpener, hammer etc) of AIPE tool is NRs 1500.00. One set can prepare several hundreds of products. However, regular servicing is provided by the farmer in the site with no additional costs. Remaining money was used as seed money to purchase logs.

#### Products and production mechanism

The operational plan prescribes to provide deformed and crooked trees and woody material for the production of implements. The CFUG provides woody material of Chilaune (Schima wallichi) equals to 60 cft per year per entrepreneur at half price than other users as a support to the enterprise. The CFUG has coordinated with two nearby CFUGs for raw materials. There are six different products. The local names of these products are halo, juwa, danda, mohi, lidko and anau. The aggregate of these components make a complete set of equipment. The most commonly required product is Halo. A Halo is also an assembled tool made from halo, danda and anau. The preparation of these various products with specific size, shapes and structure requires a great amount of skills. The skill has been translated to generation in these families. The past two years production by the entrepreneur households is presented in the table 1.

The most preferred species are *Chilaune (Schima wallichii)*, *Phalant (Quercus spp)*, *Foso (Grewia spp)*, and *Dhale Katus (Castanopsis indica)*. The amount of woody material required varies from product to product.

#### Pricing mechanism and marketing

The price for each of the components has been fixed by the CFUG and not by the entrepreneur. The

Name of the entrepreneur	Kinds of products and quantity produced in the past two years						
	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	

Table 1: Quantity of production during the past two years

CFUG's intention is to make a balanced pricing system. The CFUG regulated pricing system will also make entrepreneur accountable towards the general member of the CFUG and identical prices among the entrepreneurs, avoid fixing monopolist prices, facilitate outside selling, and also make a realization among general members that the benefit is not limited to few households. The entrepreneurs are free to sell products to outsiders. There is no market problem. The products are being sold with advanced booking from the entrepreneur houses- farm gate selling.

#### Added benefit

A halo requires 0.667 cuft of wood which is available at the rate of NRs 9 /cuft. It takes one working day to complete. The depreciation cost is smaller than the waste produced (used as firewood). A simple analysis to estimate added benefits in *halo* processing shows that each piece of *halo* earns additional 28 % benefits after deducting wood prices and opportunity costs of labor (Nrs 150). Using same estimation, about NRs 44 thousands out of 147 thousands was additional benefits generated because of the APIE.

#### Employment and income

The AIPE is supporting to the households as an additional but major source of income and employment. The productions take place at houses and in leisure time. The income information is encouraging in contributing improving household income. The following table 2 summaries the income generated from the enterprise during the past two years.

Among the four entrepreneurs, there is remarkable variation in earning amount that ranges from NRs 24 thousands to NRs 62 thousands. The table 2 also shows a strong link between the demand and the production.

#### Forest management and the enterprise

The CFUG supplies subsidized woody materials equaling to 60 cft per year per entrepreneur. The additional quantity is collected from the neighboring CFUGs and has been coordinated by the CFUG. Similarly, the entrepreneurs are free to collect from private tree grower. The CFUG has adopted following measure in linking forest management and sustainability of the enterprise.

Earlier, users gave little attention in beneficial aspects of the species during plantation. However, they have made utilitarian benefit of the species as a main preference criterion. The CFUG has established a nursery to promote private tree planting. During the removal of the plants in silvicultural operations, priority is given to maintain species such as Chilaune which is regarded as a best species for various components of the agricultural implements. The CFUG have started coppice management of Chilaune linking with agricultural implements. They have initiated activities for making regenerating environment for Chilaune and Phalanat by opening the canopy. Users started to protect the natural seedlings in their farmlands. Awareness about Chilaune and its uses has increased. The CFUG has decided not to use Chilaune other than agricultural enterprises

Table 2: Earned income during the past years

Name of the entrepreneur	halo	juwa	danda	mohi	lidko	anau	Total
Purna	50,000(250)	3,750 (25)	6,000 (30)	1,500 (10)	600 (2)	375 (25)	62,225
Jeet	30,000(150)	1,500 (10)	2,400 (12)	300 (2)	300 (1)	0	34,500
Dharma	24,000(120)	750 (5)	2,000 (10)	450 (450)	0	0	27,200
Nara	20,000(100)	751 (5)	1,200 (6)	1,050 (7)	900 (3)	0	23,900
Total	124,000(620)	6,750 (45)	11,600 (58)	3,300 (22)	1,800 (6)	375 (25)	147,825

Note: Figure in the parentheses is the quantity.

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unless the part is unsuitable. During the sectioning of the wood logs, attention is given to maintain sizes appropriate to produce various components of agricultural implements.

# Record keeping and monitoring

The entrepreneurs and the CFUG are maintaining records on the kinds and quantity of different kinds of production including the time required for different products.

# Success and reasons

The AIPE demonstrated that very small scale enterprise can be commercialized. This enterprise is successful and has been replicated in 11 CFUGs in the district. The enterprises also widened the importance of species level direct benefits to the people and encouraged them to protect and maintain it. The processing activity resulted in value addition for the species *Chilaune* from firewood to higher price products. The main reasons for the successful operation of the AIPE enterprise are as follows:

- The selection of right enterprise and entrepreneurs.
- The AIPE is benefited with the location specific advantages. The setting of the enterprise in hilly area with dominant agriculture practices, provided excellent market opportunity
- The availability of local raw materials, local market and specialized skill with high level of motivation is key to success.
- Strong institutional support to the enterprise from the CFUG, District Forest Office and the donor.
- The income is additional benefits to producers. The nature of the production that utilizes flexible time will have higher chances of success.

# **Results and Discussions**

# Origin and approach

The statistics of Parbat and Myagdi district shows that SSFBE were begun to be established since 2003 (Kanel and Subedi 2004). The beginning was with bamboo crafts making and bamboo furniture. Out of the 158 CFUGs in Parbat, Baglung and Myagdi districts, 31 CFUGs have furniture and 15 CFUGs have started AIPE.

Broadly speaking, the enterprise establishment initiative within the CF was a response of the critics on the CF that it was not able to provide immediate benefits to weaker section of the community and at households' level. At the time, there were emerging evidences that, most of the benefits from the CF were realized by fewer households (Adhikari 2005). The government, donors and other stakeholders were enthusiastic to find out ways that could generate benefits at household level and to the poor.

The enterprises establishment initiative of local people need strong moral, technical, institutional and financial support from the facilitating agencies. In both the cases, the enterprises establishment process was initiated by the CFUGs and the achievement was reached through the support of various stakeholders.

#### Investment, employment and income

The investment amount depends on the nature of the enterprises. The furniture enterprise requires higher (NRs 57,800) amount compared to the AIPE (NRs 3600 per entrepreneur). Since AIPE requires no full time working and all the income (NRs 147 thousands) generated from AIPE during past two years is an additional income to the entrepreneur households. Similarly, out of NRs 720 thousands total income in furniture enterprise, NRs 288 thousands

Step	Descriptions	Output
Identification of	Small group meeting, well being, skill, interest,	Entrepreneur households
entrepreneur	willingness	selected
Identification of enterprises	Forest products, species availability, condition, resources material	Selecting of proper enterprise
Preparation of business	Formal or informal, demand supply analysis, marketing	A simple business plan
plan	plan, fund provision, identification of stakeholders and defining roles and responsibilities	developed and funds arranged
Enterprise establishment	Combine resources and develop a enterprise for processing	Enterprise established
M&E	The stakeholders require continuous support for an extended period to ensure success	Continuous improvement

Table 3: Steps and main activities in establishing FBSSE

was additional income to the entrepreneur households due to the furniture enterprise. The entrepreneur households estimated that they could have earned 432 thousands as skilled wage labor even there was no furniture enterprise. The 100 % additional income from AIPE and 67 % additional income signify the importance of enterprises promotion in CF. The findings support the argument that enterprises have a potential in contributing rural poverty through increased income to rural farmers. The commercialization of AIPE indicates that forest management should not be considered in isolation but should be linked with existing livelihoods opportunities and farming systems promoting the use of local material and focused to provide employment to poor and vulnerable groups.

# Raw material and production

Both of these enterprises use wood as raw material. Although the major source of raw material is community managed forests, enterprises are utilizing resources from the private land and national forest.

# Market characteristics

Both of these enterprises are intended for local market and the goods and services are targeted to local market. The furniture enterprise has faced competition from other 5-6 similar private enterprises where as APIE are still selling products as farm gate markets.

# Nature of enterprises

Both the enterprises are processing in nature. The furniture enterprise can be classified as workshop

model employing relatively higher numbers. The APIE is operating at household level as defined by the Arnold 1994.

# Key stakeholders and role

The community based FBSSEs have five key stakeholders. These are the CFUG, DFO, Livelihoods and Forestry Program (donor) local people and the entrepreneurs. The willingness and commitment of the entrepreneurs are basic requirements. There should be a strong institutional, financial and material support from the CFUG. The facilitation and institutional supports of the District Forest Office and the Livelihoods and Forestry Program and the financial supports from the Livelihoods and Forestry Program were instrumental for success. The enterprises promoting approach has demonstrated strong coordination mechanism among different stakeholders. A simple conceptual model for a community based enterprise is presented in the Figure 1.

# Linkages with forest management Regulated harvesting

The case studies also indicate that local people are able to modify the way of treating their forests. The production of raw wood from the CFUG is regulated by the operational plan and excessive removal is restricted. In addition, increased numbers of farm trees are also supplying raw materials to the enterprises. The CFUGs support enterprises through certain quantity of subsidized woody material to the enterprises.

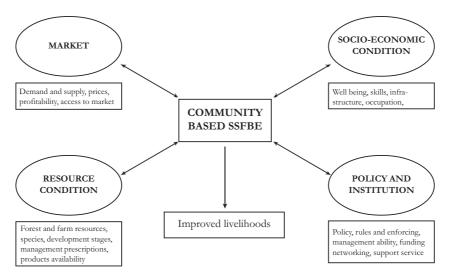


Figure 1: Conceptual framework for a community based enterprises

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**Silviculture and species preferences:** In earlier years of CF, users gave little attention in beneficial aspects of the species while selecting for plantation. They used to plant any species whatever the seedlings were available. However, they have now made criteria in choice of species for plantation. The utilitarian benefit of the species is the main criterion. During the removal of the plants in silvicultural operations, priority is given to maintain species such as *Chilaune* in Myagdi case study which is regarded as a best species for the production of agricultural tools.

The CFUG has started coppice management of *Chilaune* linking with agriculture implements specifically for producing small sized various components of agricultural implements.

**Promoting private tree planting:** The FBSSEs have contributed to plant or maintained seedlings of selected species in the private land. The CFUGs have established forest nursery to promote private tree planting.

**Wood utilization:** The harvesting mechanism such as sectioning of logs has been applied carefully so as to reduce wastage volume during the processing. In earlier days, saplings were used to prepare cylindrical shaped *danda*- a supportive component of *Halo*. In this process, one *danda* requires one sapling. After the establishment of the AIPE, it was realized that the practices is contributing in killing of huge amount of future trees. The modification resulted in the use of rectangular sawn wood, which means one log can produce several *danda* and one sapling can produce several logs in future. The use of sawn wood also has removed wrapping defects from saplings.

#### Policy and management implications

Policy issues include regulations that discriminate against harvesting of seven tree species on farm, transportation of products, location requirements for forest based enterprises, registration process that impede the development of FBSSEs.

The CFUGs are emerging as the most wide spread grass root level organizations to conserve, manage and utilize the forestry resources in Nepal. Under such circumstances, there is a greater role of organizations such as government and NGOs in strengthening the capacity of CFUGs members by providing technical, financial and managerial skills to develop forest-based enterprises at community as well as household levels. The findings show that both of the enterprises were operated by below poverty line households, and the enterprises were built on their traditional skills and knowledge. The CFUGs funds and resources have started investing on the poor to establish and operate FBSSEs showing an opportunity to promote the enterprise development and contribute to poverty reduction

The modification of forest management aspects would have substantial implications on forest structure and productivity. The most important among them is the implementation of active forest management leading to increasing forest products from the community forests. The increased output will improve forest productivity. The modified use of traditional tools such as *dando* will prevent felling of saplings and poles, most productive development stage; and improve forest production and productivity.

The replication of enterprises by nearby CF not only contributes to reduce poverty but also to improve forest productivity and quality. This will have substantial implications for both the demand supply dynamics of forest products from CF. The selective removal or preferences of particular species during harvesting can also have knock-on effects on the forest that could affect its economic and ecological value including the biodiversity conservation.

# Conclusion

The case studies indicate that promotion and implementation of FBSSEs can affect the livelihoods of many people in the rural areas of Nepal signifying the relevance of CF in broad strategic planning for poverty alleviation. The activities undertaken may vary and include a wide variety of forest products that are in demands ranging from subsistence based agricultural implements to furniture enterprises. The case studies indicate that wood based enterprises have a space in the CF and local people are able to modify the way of treating their forests to sustain the enterprises. The availability of local market, skills and local raw materials combined with a strong institutional support are keys for the successful community based enterprises. The selection of right entrepreneurs and enterprise options, provision of continuous follow up and counselling are the basic requirements for the success of FBSSEs.

For the benefits of community based enterprises, there is a strong need for policy advocacy in favor

of poor and marginalized community on the concept of right based approach to development rather than relying on relief and reform approaches. In addition, the facilitating agencies should initiate feasibility and identification of enterprises in each community forests. The scaling up of the best practices and experiences is equally important. The formation of inter-sectoral linkages is very important to maximize the potential benefits from the enterprises as the enterprises fall within the jurisdiction of different line agencies.

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