Extraction of NTFPs from the Community Forest: Analysis of Benefit Distribution Pattern in Household Level

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Abstract

Benefit distribution pattern in community- based resource management have become major issues since few years. Only highlighting successful institutional attributes to manage forest resource may be detrimental in long run. This study explores the value of Non-Timber Forest Products (NTFPs) extracted from the community forestry and their distributional pattern based on wealth categories of households. Findings show that value of NTFPs is higher than other forest products like timber and the gross value of extracted NTFPs is higher in weather household than poor. Households with large land and livestock size gaining more benefit from the community forestry. Some of new rules and regulations in community based resource management tried to exclude poor societies rather than secure them. The recommendation of this study to improve community forest management in Nepal is reformulation of users' rights to support rural livelihood particularly poor and marginal households.

Key words: NTFPs, common property resources, community forestry, forest user group sustainability

INTRODUCTION

The sustainable management of hill forest resource in Nepal has been becoming a growing issue since five decades. The limitation of a timber oriented forest management strategy manifested the destruction of national forests, reduction of productivity and alienation of forest-dependent populations from the use of common property resource. This has triggered the search for alternative strategies where the forest and people's needs, can be reconciled in a sustainable way. The non-timber oriented forest management is a suitable option for sustainable exploitation of forest resources and economically competitive method for integrating the use and conservation of forests (Peters *et al.* 1989) and extraction of Non-Timber Forest Products (NTFPs) from the forest is considered as less ecologically destructive compared to clear felling for timber (Gunitlake 1998). Sustainable forest management system has focused on several alternatives and one of these may be that forests can be sustainably managed by harvesting annually regenerating NTFP and would be able to generate employment, income and even precious foreign exchange. The interest in NTFPs is increasing specially due to contribution of this sub-sector to poverty reduction. As NTFPs have direct bearing on daily living of communities in the mountain and hills, this sub-sector is emerging as a viable alternative to generate income and hence improve livelihood of rural farmers.

The rural subsistence economy of the country depends to a significant extent on primary products from agriculture, forestry, and other easily accessible natural resources. Rural food systems are well integrated with forests primarily because farmers rely on animals for draft power and dung fertilizer to maintain long-term soil productivity, and most of the feed for these animals comes from forest and range areas. Many traditional agricultural inputs such as leaf litters, grass and fodder, small tools, fuel woods etc are regularly harvested from the forest. Without the manure generated by cattle and buffalo, it is in fact conventional wisdom that hill agriculture as it exist today would not be possible on a long-term basis (Bluffstone 1995). These products have played a dual role in forest dweller's livelihoods, as subsistence products to meet daily and seasonal needs and to cover demand in years of poor harvest, and as commercial products that contribute to their household cash economy (Arnold 1995; Gopal 1999). In addition to subsistence and income generation potential NTFPs also provide food security to large low-income households, their cattle and other domestic animals, particularly during droughts or famines.

COLLECTIVE ACTION AND BENEFIT DISTRIBUTION

The community forestry program has been received highest priority in forestry sector since 15 years particularly after decentralizing the responsibility to user's group for decision-making, management, protection and control of forest. This approach in Nepal is considered as one of the successful collective action for common property resource management. This approach has positive impact on protection and regeneration of degraded forest particularly in hilly region of Nepal. The Ninth Five Year Plan re-emphasized the need for biodiversity conservation, and use of NTFPs to alleviate poverty. The guiding principles for forest management were to promote participatory and ecosystem-based management, sustainable forest development, poverty alleviation, and to establish a national forestry fund. Equal emphasis has been given for the conservation of plants including medicinal plants and sustainable use of NTFPs. Ninth Plan and Poverty Reduction Strategy Paper (the Tenth Plan) also claim community forestry program has been very successful in the country to create income generation opportunities for the poor and 'user group approach' is particularly useful in mainstreaming poor and deprived communities in forestry sector activities. Only highlighting successful institutional attributes in the planning process to manage forest resource may be detrimental in long term. The growing issue is that, can collective actions always be equitable in benefit distribution from the common property resources. This is because the equitable distribution of the forest products creating major problem in the participation of multiple stakeholders in community forest management (Adhikari 2003; Malla 2000; Olsen and Helle 1997). Olsen and Helle argue that, with regard to NTFP, nominal forest law in Nepal is inconsistent with declared long-term policies aimed at alleviating poverty by increasing income in rural hill communities. In Nepal, policy formation, implementation and the field reality in the NTFP sector are weakly connected (Helle *et al*. 2000).

NTFPs can contribute to poor households income because these households are lacking land resources to cultivate crops. So they can generate some income from marketable NTFPs. But community forestry has excluded large proportion of rural poor to get direct benefit. In the other hand, thousands of tones of NTFPs are collected from forest land of mountain and hills every year and traded to India, but local collectors who are mostly rural poor get only a small fraction of value of end sales in international markets (Edwards 1993, 1996; Ojha 2001).

Adhikari (2003) argued that clearly defined common property rights on common pool resources are a necessary but not sufficient condition for sustainable and equitable resource use. His findings indicate that certain groups in community forestry are able to gain access to and benefit from collective actions. This is because socio-economic attributes of households like landholding, livestock holding, and family size has direct impact on the extraction of forest resources and some of Forest User Groups (FUGs) rule and regulations also tried to exclude poor societies. This exclusion from the forest use is a serious challenge to community forestry management and poverty alleviation. The main focus of this paper is analysis of benefit distribution pattern in community forest based on extracted value of NTFPs.

STUDY SITE, METHODS AND DATA COLLECTION

This study was carried out in Pyuthan District, one of the mid-hill regions of Nepal where community forestry approach has been practicing for many years. One community forest in Chuja Village Development Committee of the district was selected purposively to find out benefit distribution pattern in household level. Stratified random sampling technique was used to select households at the village level. Through Participatory Rural Appraisal (PRA), households were categorized into three wealth level, rich, middle and poor based on the landholding size, livestock holding and annual income level. Primary data were collected through household survey of 50 respondents within three categories.

The focus of survey was to value the contribution of NTFPs to the household economy. These products include tree and grass fodder, root, stem, bark and leaf of medicinal plants, wild vegetables, fruits, leaf litter etc. In order to provide a rigorous measurement of the value of NTFPs, the survey included as wide range of NTFPs as possible. This research tried to calculate the households' values on the basis of NTFPs use rather than their availability. Local price data were collected to calculate the resource values and allowed calibration of environmental resource use value against a full accounting of the household's other economic activities. The other income sources were agriculture, wage labor, government and non-government services, service to foreign countries etc. Among the NTFPs collection from the forest medicinal plants were marketed and other i.e. firewood, tree and grass fodder, leaf litter have been found significant to household economy after PRA and pre-testing of questionnaires. To obtain more accurate information, this research calculated daily used amount by weighting these forest products. The seasonal variations were also considered during data collection.

VALUATION OF NTFPS

The NTFPs use data were valued and aggregated using standard principle for household involves in both market and non-market activities to produce household income accounts. This research used household's own reports of both the quantity and total value of their resource utilization, whether these were for collection, consumption, purchase or sale. The potential problem with this method is that many NTFPs are not traded in formal markets and there is considerable uncertainty about the value of their NTFPs utilization, resulting in a substantial missing problem and highly inaccurate valuation. In this research mainly three methods of valuation of NTFPs i.e. market prices, willingness to pay (household reported prices) and prices of substitutes were used where applicable.

RESULTS AND DISCUSSION

Forest Management Under Forest User Group

Among the three categories i.e. state forest, community forest, and private forest, Local Forest User Groups (LFUGs) control the second category of government-owned forests. Regardless of their legal title, these forests are treated by local people as a common property resource and are referred to as *Hamro Ban* (our forest). A community forest is a national forest handed over to a user group for its conservation, development, and utilization for collective benefit. A prerequisite for this is an operational plan approved by the District Forest Officer, which serves as a contract between the Forest Department and Local Users. The forest users prepare this plan in collaboration with forest officials. An important feature is the establishment of a village-level forest user committee, which is authorized to implement forest management and to distribute or sell forest products. The main contrast with indigenous FUGs is that the forest user committee of a community forest is recognized and sponsored by the state. In the community forest, villagers only have access to forest products, but the forestland remains state owned.

All FUGs have independent power to decide and prepare forest management plan. In community forest, local people have often initiated management practices for NTFPs collection. These indigenous management practices mostly consist of controlling NTFPs product through the definition and control of user rights. In such cases, only the members of a FUG are allowed to extract NTFPs from the community forests. Other people living in the area regard these rights as legitimate. The user groups may also decide that the forest is closed for collection of NTFPs until the products are ready to harvest. In this case, the forest user committee fixes the opening date. In addition, regulations on collection techniques are formulated in order to enhance regeneration and production of NTFPs, for example, by prohibiting felling or branch lopping, uprooting, etc. The collection season in community-managed forests is very short and the largest quantity is collected on the opening day. During collection period, limited member of each household can gain admission to the forest after

paying fee to the committee. As a result of the harvesting rules, collection of NTFPs in community forests is more efficient and yields are higher.

The analysis part of this research includes distributional issues of income from NTFPs in household level. Total value of NTFPs on household level is the most important factor affecting the collection and production plan of the local people. Income information has been used to test the impacts of forestry policies, enterprise and market development. Many literatures argued that rights to common property are particularly important for poor people (Stener 2003; Tewari and Compbell 1996; Tewari 1999; Cavendish 1998). Collection of NTFPs especially grass, fodder and leaf litter are directly related to the livestock size because these intermediate products are used for livestock feeding and bedding materials. Household with large land size also need large amount of these products for agriculture activities because in hilly region soil fertility management and plowing of their agriculture land are directly related to size of livestock holding (Brown 1999).

CONTRIBUTION OF NON-TIMBER FOREST PRODUCTS

Average Gross Values Extracted from Community Forests

Most of the NTFPs provide the indirect benefit rather than direct. Farmers have been collecting these products basically for home consumption. Livestock grazing in the forest, forest lopping, grass and fuel wood collections are basically done for subsistence consumption. In the research sites only few NTFPs (*Dalchini* and *Timur*) are marketed for cash income. Average gross value per household per year is illustrated in Table 1 with specific NTFPs collection of other NTFPs from the community forest are banned by user group.

Table 1. Average value of harvested NTFPs from community forest (NRs. per household in last 12 months)

Forest product	Large farmer	Medium farmer	Small farmer
Babio (thatch grass)	794.25	1,030.90	801.30
Litter	204.66	126.40	110.25
Grass	422.66	258.00	179.60
Fuel wood	899.00	863.18	724.8
Total	2,320.57	2,278.48	1,815.95

Source: Field survey 2003

The average amount of extraction is increasing from small to larger farmers. This may be due to the fact that smaller farmer have small land holding size and less number of livestock so they can not use intermediate forest products like grass, fodder, leaf litter which is a major contribution of NTFPs form the community forest. These findings are similar to that of Adhikari (2003) and confirm that poorer households are currently less benefiting from the community forestry. This is due to the effect of landholding and livestock holding size in the household level, which provide the main demand for forest products as inputs.

Agro-forestry is the most important features of the hill agriculture system. The contribution of agro-forestry in terms of fodder and grasses is significantly higher than that of natural forests in community forestry area, it is because of the fact that farmers cannot collect NTFPs through out the year from the community forest. Crop residues and by-products such as rice straw, maize stubble, millet and wheat bran, mustard cake, straw and grain residues of legumes were provided to the livestock as feed materials. The value of NTFPs extracted from the private forest has also declining trend with farm size. Therefore, size of landholding has direct impact on availability of NTFPs.

Table 2. Average value of harvested NTFPs from the private land in community forestry area (NRs. per households in last 12 months)

Forest products	Large farmer	Medium farmer	Small farmer
Dalchini[1]	1,505	935	679
Tejpat[2]	220	57	142
Ritha[3]	453	78	192
Churi[4]	265	360	281
Thatch grass	2,551	1,235	606
Litter	1,508	1,652	717
Grass	5,356	5,732	2,642
Fodder	4,166	5,632	2,869
Fuel wood	2,752	2,742	1,554
Total	18,776	18,423	9,682

[1] *Cinnamomum tamala,* [2]*Cinnamomuy tamala,* [3]*Sapindus mukorossi,* [4]*Brassi butenacea*

Source: Field survey 2003

Percentage Contribution from CF to Total Income

Table 3 shows the percentage contribution of different income sources to total household income for the three different income categories. The percentage share of forest and off-farm income is higher in poor income groups than rich. Finding shows that poor are mostly dependent on off-farm activities like wage labor, seasonal migration to town and foreign countries. Due to the lack of agricultural land, its share is very low in poor categories. The proportion of gross value from agriculture and livestock related products is increasing trend with wealth because richer households taking more benefits from the forest products.

Table 3. Percentage contribution from CF to total household income

Income sources	Large Farmer		Medium farmer		Small farmer	
	Income (NRs.)	% Share	Income (NRs.)	% Share	Income (NRs.)	% Share
Agriculture and livestock farming	28,927.93	28.24	21,521	26.20	8,782.85	17.36
Off-farm activities	52,982.1	51.74	41,900	51.01	30,003	59.30
Forest products	20,496.37	20.02	18,730	22.79	11,815	23.34

Source: Field survey 2003

CONCLUSIONS

The principle concern of this study has been to explore the benefit distribution pattern in community forestry concentrated on NTFPs. The dependence of rural people in NTFPs from the common land is historic and has both direct and indirect benefit in household economy. The gross value of extracted NTFPs is higher in large farmer because most of the NTFPs are used as inputs in agricultural and livestock farming. Whereas percentage share of forest products is slightly higher in small households due to low agricultural and livestock income. It indicates that the relative dependence on forest resources decline as household income rises. Present FUG rules and regulations also seem unfair for poor households. Long-term ban in NTFP collection for regeneration purpose in community forestry may be meaningless because collection of NTFPs is considered as ecologically less destructive than clear felling for timber. FUG use funds collected from fees and selling timber to develop some social activities like construction of irrigation cannel, temple etc have no direct implication to landless and

lower caste households. Therefore, to support poverty reduction through community forestry due concentration must be given in benefit distribution pattern between its different stakeholders.

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