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CAN COMMUNITY FORESTRY PLAY A MAJOR ROLE IN THE SOCIO-ECONOMIC ENHANCEMENT OF POOR USERS IN NEPAL?

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Abstract

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Nepal is increasingly gaining world-wide recognition in participatory forestry and natural resource management, primarily through "Community Forestry" program which has a well documented history over three decades. This study was carried out in Tibrekot Community Forestry in Nepal focused on the local poor forest users with the objective to find out the changes brought by the community forestry in the socio-economic enhancement of local forest users, to analyze the level of participation in community forestry management activities and to assess the ecological/economical aspects of the forest. The Participatory Rural Appraisal tools were used to collect the data from sampled households, key informants interview and interaction with different organizations involved in the forestry sectors in the study area. Data were collected using household interview, semi-structured questionnaires, interview schedule and checklists; and data were inserted and analyzed in MS Excel 2007 sheet and in SPSS 17 (Statistical Package for Social Sciences). The chi-square test at 5% level of significant was applied as well. The findings showed that the forest users' participation in meetings and discussion and other activities like community forestry management, silvicultural operation related to community forestry was high. Likewise, it was found that the forest contributes 20% in the total income of the forest users. It also showed that the greenery has improved, water sources have restored back and environment of the surrounding has improved a lot after handing over the forest to the users in the study area.

Key words: community forestry, poor users, socio-economic, income, participation, greenery

Introduction

Nepal is a mountainous, landlocked, poor but full of natural resources country which lies in the lap of Himalayas in South Asia between 26°12′ and 30°27′ North latitude & 80°4′ and 88°12′ East longitude and bordered by China on the north and India on the remaining three sides. Forests and agriculture are an integral part of the farming systems in Nepal, where farmers depend upon them for their livelihood (Acharya and Dangi, 2009). Forest resources are one of the means of livestock farming, inputs for agriculture and supply for timber and non-timber forest products to the local people living in and around them. It is known that poverty is concentrated among the marginal people who include women and women groups, marginal farm households, low caste and inaccessible areas of Nepal (Acharya, 2011). The Forest Act 1993 of Nepal defines Community Forestry (CF) as a part of national forest handed over to

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different user groups under specific rules and regulations for its conservation, development and utilization for collective benefits. The Community Forestry program is a major strategy to manage the country's forests where about 1.45 million rural households in Nepal are engaged into more than 17 685 Community Forestry user groups who are responsible for managing and using 1 652 654 ha of National Forestlands (DOF, 2013). Uprety (2006) has quoted that Community Forestry is only the people oriented natural resource where the people have right to use and manage their resources without any obstacles. The Community Forestry has twin goals of conserving the natural resources and providing local users with forest products and has been proven to be a successful strategy for reforestation and improving the quality of existing degraded forestlands (Rechlin et al., 2002). Despite a prolonged decade insurgency and political upheavals, the Community Forestry has improved the livelihood of rural households, nurture democracy at the grassroots and provided the forest products for local users (Ojha and Pokharel, 2005; BK et al., 2009).

It is known that in rural Nepal, the forests provide leaf litter, firewood, fodder, grazing resources as well as timber to sustain their livelihood, so they are considered as key natural resources. The productivity of the forest should be improved, available resources should be utilized efficiently and scientific management of forest should be done in order to meet the increasing demand of direct forest products but in fact the community forests which produce high direct forest products and generate high environmental benefits are not necessarily utilizing resources efficiently (Misra and Kant, 2005). Although the well stocked and well managed forest provides sufficient amount of forest products to the users and helps to maintain good environment, a household is motivated by many different factors whether to participate or not to participate in a community forest management activity because the poor households do not benefit from community forests as much as the others and are not very interested in community participation (Malla et al., 2003). Poor households generally have a high opportunity cost of participation as this time spent on participation could be used as labor in others' field for cash income (Adhikari et al., 2004). In order to improve the livelihood of rural areas, the farmers must have access to forest products such as leafy biomass for fodder and animal bedding, fuel wood for energy, and timber for building and agricultural implements (Mahat, 1987; Gilmour and Fisher, 1991; Malla, 2000).

Community Forestry program in Nepal is considered as livelihood improvement program after its stages of plantation, protection and production in 1970s, 1980s and 1990s, respectively. But still there are some studies which show the flow and distribution of benefits from Community Forestry which widens the gap between poor, Disadvantaged Groups (DAGs) and rich people involved in Community Forestry management. Equitable participation in decision-making with bottom up approach, benefit sharing and community involvement are the key human development factors in Community Forestry (Kanel et al., 2004). Rasaily and Zuo (2012) has studied that there is a heavy dependency of poor households in community forests for most of the forest products used for livestock rearing whereas on the other hand the rich and medium wealth class households rely on private forests for many forest products, even though community forest remains a very important source of livelihood.

The government also has the policy to meet the basic requirements of the local communities through the active participation of individuals and communities in forest development, utilization and management. There is a huge surplus of forest products for commercial purpose, after the year of protection because the growing stocks and potential yields have increased a lot (Kanel and Kanel, 2004). Different studies in the Community Forestry show that it is possible to reduce poverty from forest by securing resources for poor, increasing the availability of a range of resources and providing potential for income generation activities (IGAs), so with the establishment of Community Forestry, it has been increasingly realized as an attainable mechanism that can contribute to reduce poverty in Nepal (Gentle, 2000; NPC, 2002; Kanel, 2004 and Baral, 2008). Therefore, this study was conducted to investigate the role of Community Forestry in the socio-economic upliftment of poor users.

Materials

Study Area: As the mid hills of Nepal is famous and successful in implementation of Community Forestry, this research was conducted in Tibrekot Community Forest User Groups, Hemja, Kaski which lies at 28°16′53″N latitude and 83°55′50″E longitude. It covers an area of 119.75 ha and has been divided into 5 blocks for different silvicultural operations (Figure 1). It was handed over as community forestry to users in 2000 A. D. The average elevation of the site is 1000 m from mean sea level and is located on the North-South aspect. The community forestry is composed of *Castanopsis indica*, *Schima wallichina*, *Alunus nepalensis*, *Engelhardia spicata* and *Myrica esculanta.* The Non-Timber Forest Products (NTFPs) found are *Mangifera indica*, *Choerospondias axillaris*, *Asparagus recemosus*, *Cissampelos Pereira* and *Berberis aristata*. The animals found are *Acinonyx jubatus*, *Panthera paradus*, *Macaca mulatta* and *Canis aureus*. The birds found are *Lophura leucomelana*, *Zenaida auriculata*,

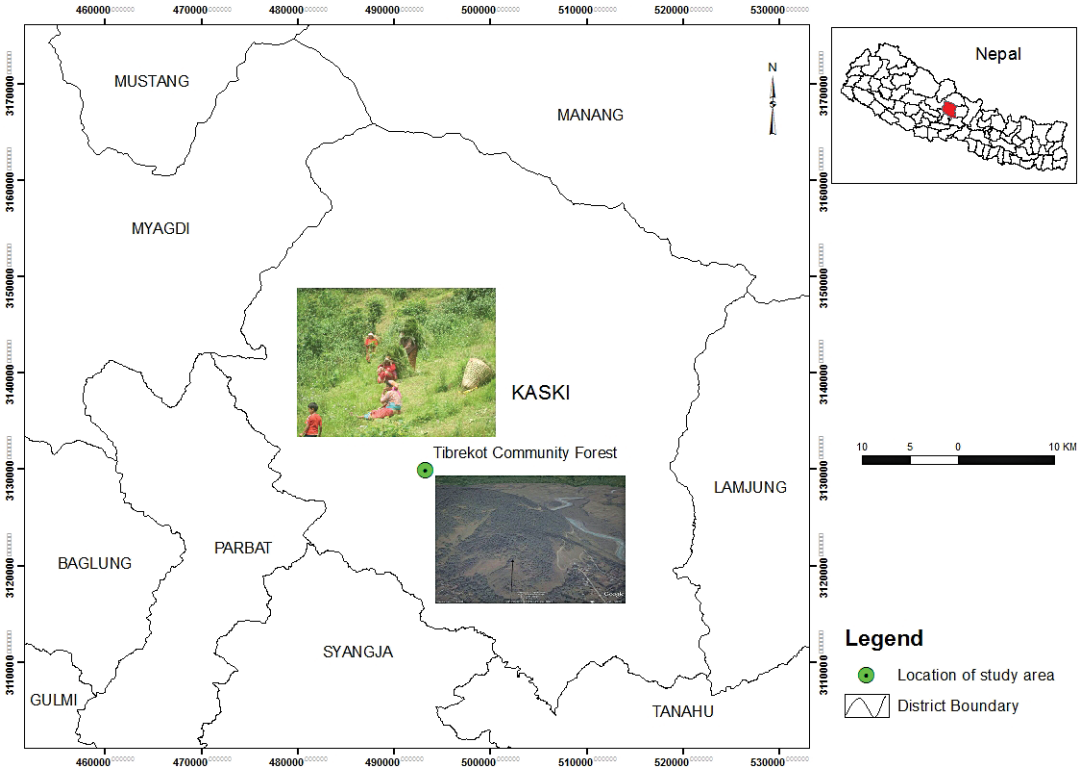

Fig. 1. Map of the study area

Corvus macrorhynchos, and *Purpureicephalus spurius*. The total beneficiaries of the forest are 1103 people who include 519 males and 584 females and who are roofed under 213 houses. Out of them, 190 belong to rich and middle classes whereas the remaining belongs to poor households.

Methods

Purposive sampling was conducted focusing on the poor users of the community forest. Out of 213 households, only 55 households were interviewed where two sets of questionnaires were entertained in which one was used for household survey and the next one was designed for key informant survey. For cross checking the obtained data, field observations in the rural livelihood and forest were made. The wealth-being ranking was done by Community Forestry User Groups as the guideline prepared by department of forest on the basis of food sufficiency, number of cattle, external income sources, house structure and others. There are three categories. Rank A (Rich) which includes surplus production from own land; at least one family member engaged in a government job, business or other secure off-farm job with a good cash income; children attend schools/colleges in towns; acquired high percentage of forest products from private forest. Rank B (Middle) which includes sufficient food for 9-12 months with no surplus for sale; some households with access to off-farm income; send children to schools / colleges in nearby villages; acquired moderate percentage of forest products from private forest. Rank C (Poor) which includes sufficient food only for 3–6 or even less months; in some cases, they don't have any land, mostly engaged in wage labor in surrounding villages, send children to schools in the village, relatively acquired low percentage of forest products from private forest.

Data Analysis and Interpretation: The collected data were categorized and edited, coded and fed in computer. The data were processed and analyzed using computer software packages such as Microsoft Excel 2007 and SPSS 17.0 (Statistical Package for Social Science). The quantitative data were analyzed using statistical tools like percentage, mean whereas the qualitative data were analyzed in descriptive way and findings are in tables, charts and figures with interpretation. The Likert scale was also used. The Pearson Chi-Square test was applied to test the impact of community forestry pro-

gram on the off farm income, effect on attending meeting and effect of community forestry in improving the condition of the forest.

$$\chi^2 = \sum_{i=1}^{n} \frac{(O_i - E_i)2}{E_i},$$

where: χ^2 – Chi-Square,
O_i – an observed frequency,
E_i – an expected frequency

Results and Discussion

Demography of study area

Demographic characteristic of the respondents are shown in Table 1. There were minimum 3 to maximum 11 members in a family with an average family size of 5.21 people in a family. About 73% people dependent upon agriculture, 10% were engaged in small shops/business, next 10% were engaged in teaching and the remaining 7% worked for the government services for sustaining their livelihood. Of the total, 44% of households had food subsistence for 9 to 12 months, 23% had food sufficiency for 3–6 months, followed by 20% had food sufficiency for 6–9 months, while next remaining 13% had food sufficiency for just 3 months or less. The average land holding was 0.1538 ha upland non-irrigated (bari land) and 0.2383 lowland irrigated (khet land) per household and the average number of livestock included 1.11 buffaloes, 1.32 cow/ox and goats 2.92. 83% were Brahmins/Chhetri, followed by indigenous 14%, and untouchable castes (dalits) were just 3%.

Table 1
Demographic characteristic of the respondents (n = 55)

Age (Years)	Percentage	Frequency
< 20	7.3	4
20–40	41.8	23
40–60	32.7	18
> 60	20	11
Sex		
Male	47.3	26
Female	52.7	29
Occupation		
Agriculture	92.7	51
Others	7.3	4
Education		
Literate	23.6	13
Primary	41.8	23
Secondary	29	16
College	5.4	3
Wealth Status		
Rich	20	11
Medium	25.5	14
Poor	54.5	30

Income of Household

It was also found that agriculture farming was the main income source, which included vegetable farming, goat rearing and poultry. The forest contributed solely to 20% of the household income. The 50.9%, 32.7% and 16.3% respondents responded that the contribution of forest to off farm income was high, medium and low respectively which are shown below in the bar graph in Figure 2. The calculated chi square is 9.855 where as tabulated chi square is 5.99 at 2 degree of freedom (df) and at 5% level of significant. The chi square test shows that there is a significant difference about the responses (high, medium and low) of the respondents i.e. contribution of forest to off farm is increasing.

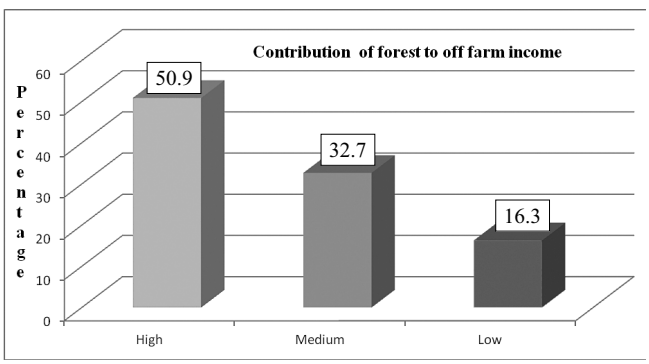

Fig. 2. Contribution of forest to off farm income

Perception of respondents towards socio-economic upliftment from forest

Contribution of community forest towards socio-economic enhancement was measured in terms of perception using the Likert scale. It was found that 29.1%, 47.3% and 23.6% responded strongly agree, agree and neutral respectively towards socio-economic upliftment from forest, but nobody responded disagree or strongly disagree which can be seen below in Figure 3. It shows that Community Forestry is really fruitful for the local users in improving their livelihood.

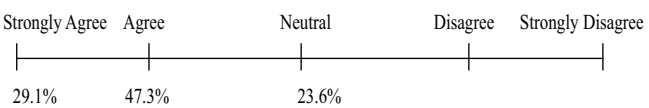

Fig. 3. Perception of respondents towards socio-economic upliftment from forest

Participation in Executive Committee and Meeting

The executive committee should have representations from all the users including marginalized, woman, disadvantage groups, untouchable castes (dalits) and poor users. It was found that 69% attended meetings and other activities of the user group regularly whereas remaining 31% do not attended such meetings and other activities. All the members presented in the meeting including the executive members took part in making the decisions. It was found 87.3% responded that they play an active role in decision making in the meetings. It was reported that poor people have no time to attend meetings and do other social works, they were only busy in their house works and other works like labor work for making money. Most of the poor used to sell vegetables, work in other farms and a few practiced goats rearing to make their income. Goat rearing, vegetable farming and non-timber forest products cultivating are very famous and successful income generation activities in Nepalese rural areas. The tabulated chi-square is 7.82 with degree of freedom (df) 1 at 5% level of significant where as the calculated chi square is 68.44. The calculated chi square is very high as compared to tabulated, which proves that the frequency of attending meeting is also very high.

Table 2
Respondents on different aspects of community forestry and livelihood (n = 55)

Level of Satisfaction of the product distribution system	Percentage	Frequency
Very Satisfied	0	0
Satisfied	5.5	3
Neutral	10.9	6
Unsatisfied	72.7	40
Very Unsatisfied	10.9	6
Respondents on greenery, water sources and soil erosion		
Greenery		
Increased	98.2	54
Decreased		
No Changed	1.8	1
Do Not Know		
Water Source		
Increased	100	55
Decreased		
No Changed		
Do Not Know		
Rate of Soil Erosion		
Increased		
Decreased	100	55
No Changed		
Do Not Know		
Climate and landscape of the surrounding after the formation of community forest		
Good	98.1	54
Bad		
No Change	1.9	1
Do Not Know		
Condition of Natural Calamities and Illegal Felling, Looping and Hunting after the formation of community forest		
Natural Calamities		
Increased		
Decreased	98.1	54
No Changed	1.9	1
Do Not Know		
Illegal felling, Looping and Hunting		
Increased		
Decreased	96.4	53
No Changed	1.8	1
Do Not Know	1.8	1

Condition of the forest before managed by the community

The forest before managed by the community was in poor condition. It was degraded and was naked. Usually the degraded forest is handed over to the users in Nepal as Community Forestry. The respondents were asked about the improvement of the forest after handing over to the users (Table 2). Exactly 80% responded that it is very much improved as compared to before whereas just 20% responded that it is improving. But none of the respondents replied it is bad or deteriorated than before. The tabulated chi-square is 3.84 with degree of freedom (df) 1 and at 5% level of significant where as the calculated chi square is 19.8. This shows that there is a significant difference in improving the condition of the forest after it has been handed over to the local users. It means that the poor condition forest was given to the users, but now they have conserved it and made it better. The pie chart below in Figure 4 shows the condition of forest before managed by the community.

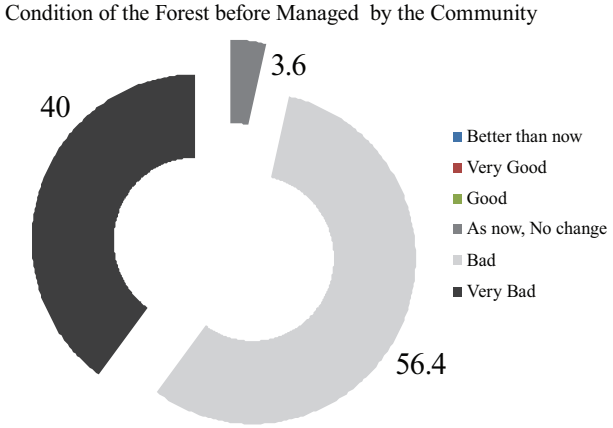

Fig. 4. Condition of the forest before managed by the community

Conclusions

Community Forestry is a new policy innovation in Nepal and is popular because it has gained emphasis from local to national level due to higher level of users' involvement in forest management. The forest provided both direct and indirect benefits to the users. It was found that forest contributes 20% in the income of the users. The Chi-Square test shows that the community forestry is an important component of the livelihood of the study area. Although there is active participation of local users, the participation of poor and disadvantaged users in decision making process has not approached to satisfactory level which should be increased. The condition of the forest has improved a lot after handing over to the users. Greenery has improved, climate has ameliorated, water sources have come back, environment has improved a lot but natural hazards like soil erosion and landslide has minimized a lot.

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