

Glamour and gripes of community forestry: impact on income distribution

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This paper quantifies the contribution of community forest on farm-household income in order to assess the impact on poor-rich gap. The study, conducted on forty-two households of Badikhel Village Development Committee of Lalitpur District has revealed found that community forestry income contributes 12 and 3 percents of farm-household income of poor and rich households respectively. One important finding that while narrowing poor-rich gap community forestry, simultaneously increases within-group inequalities hence, total inequality remains the same". The paper recommends for strengthening the linkages of poor households with community forest and stresses on the need of research to understand multiplier effects of community forestry on village economy.

Key words: community forestry, income distribution, socio-economy.

Last six decades witnessed a shift in the paradigm of forest management in Nepal. In early days, local people employed watchers to protect the nearby forests for satisfying the domestic needs (Fisher, 1989) however, the degradation of the forest resource continued. The promulgation of Nationalisation Act 1957 and subsequent failure of management efforts turned forests into the open access resource with a tendency of free ride among the villagers. The Act besides instituting state control also imparted 'custodial element' in the departmental actions pertaining to the forestry.

National Forestry Plan 1976 (Anonymous, 1982), with the objectives: restoration of nature-balance, economic mobilisation, scientific management, and promotion of public co-operation, paved way for the promotion of community forestry in Nepal. There was a shift in strategy, legally involving people in forest management. The plan, while overly emphasising plantations and protection of forest resources, softened 'custodial element' thereby created conducive-environment for people's participation in forestry activities.

Forest Act 1961 was amended in 1978 to incorporate the provisions of Panchayat and Panchayat Protected Forests. However, the Act failed to produce desired result as the managerial responsibility of the forest lied with the local political entities. Moreover, the forest was handed over on the basis of political boundary without any proper identification of traditional and real use

rights. Hence, it neither contributed to an efficient management nor ensured effective peoples' participation in forestry activities. After all, these changes neither created environment for fuller participation of the villagers nor entrusted them with an authority to protect, manage, and utilise the forests. Thus the status of "custodial element" remained the same (Anonymous, 1991). However, changes in forest management became gradually evident after the implementation of Forestry Sector Master Plan in 1988. The plan focussed on achieving peoples' basic needs for various forestry products, increase income at village level, and conserve natural ecosystems and genetic resources by maintaining a safe and wholesome environment.

Adequate policy measures were taken for achieving the mentioned objectives (See Master Plan for Forestry Sector, 1988).

Policy strategies pursued to improve legal and institutional framework, augment supply, transfer of managerial responsibility, and redistribution of forestry products. Among the various components included in the Plan, the community and private forestry was one of the largest components.

In 1991, after the reinstigation of multiparty democracy in the country, the government pursued a policy of handing over forest resources directly to the villagers so that they can use it for rural development. Department of Forests started identifying villagers and organised them as the

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forest user groups. In the true spirit of community forestry and for implementing the strategy suggested by the Master Plan, Forest Act 2049 was promulgated in 1993. The Act's preamble states "for meeting the basic forestry needs of the public in general, to attain socio-economic development and promote a healthy environment for ensuring development and conservation of forest through proper utilisation of the forest products". The Act emphasised on greater co-operation in conservation, management and development of forest resources. The Act paved way for the formation of forest user groups (FUGs) to protect, manage and utilise the forest products to meet local needs of fuelwood, fodder and timber. The Act also encouraged collective efforts towards community development through the sell of surplus products. Forest Regulation was issued in 1995 with outlines for protection, management and utilisation of community forests. It prioritised the utilisation of fuelwood and timber for meeting the domestic need of the rural people moreover, simplifying flow of wood energy to the rural people.

Since much has been written about the formation of Forest User Group (FUG) and handing over of forests, the present paper does not intend to repeat them all. However, the community forestry heralds 'people centred forestry' as it is geared to the rural institutional building, greater self-reliance, management-flexibility, emancipation, and empowerment of the deprived and the poor section of the Nepali society.

The government's forest policy intends to "develop and manage forest resources through peoples' participation, for meeting their basic needs, with a phased hand over of national forests to them. About sixty percent of the national forests (3.9 million hectares) is designated to be handed over as the community forests (Anonymous, 1991). So far, 662 thousand hectares of national forest is already handed over to forest user groups, encompassing some one million households. More than nine thousand such groups are formally entrusted with forest management responsibilities including the authority to fix price of the products generated from the community forest.

Equity - disparity dilemma

A study on the commons, in dry lands of India, signifies its role in reducing inequality in income

distribution. The study postulates "one-fifth income of the poor, a crucial for subsistence living, comes from the commons that the rich discards due to an unattractive return" (Jodha, 1986). The plight of commons from drylands of India may not hold true for community forestry in Nepal as the latter have attractive rates of return.

Rural rich of Nepal generally own more land, big houses, and have larger family and keep larger herds of animals, as the farming is more integrated in the rural livelihood. Eventually, the rural rich use forest products in larger quantities and consequently, benefit from the community forest may trickle more in their favour. The issue of equity in community forestry has received little attention to date (Malla and Fisher, 1988; Fisher, 1990) though the question 'can community forestry help to narrow rich-poor gap?' becomes imperative. The present attempt is to assess the contribution of community forestry practices on farm-household income, and the impact of these practices for a socially justifiable distribution of income.

Method

The crux of the research was "to assess the magnitude of change in income distribution" with a track on sale, pricing and distribution mechanism of forest products in the research area.

The research was conducted at Badikhel Village Development Committee (VDC) of Lalitpur District which comprised of 112 households. Wealth ranking was implied to assess the socio-economic structure of the community. A survey was administered in 42 households, stratified into poor and rich groups, during July-August 1998. The questionnaire included questions on housing, food security, literacy, landholdings, livestock, private trees and household-income. Furthermore, MS Access database was maintained and the information was analysed by Statistical Package for Social Sciences (SPSS), mainly the Chi-square tests. Pearson's Chi-square test was applied for determining the significance of differences nonetheless, validation rule often required other tests e.g., Fisher's exact test. The impact on income distribution was measured in terms of within (i.e., within rich and poor households) and between (i.e., between rich and poor households) group inequalities and the total income inequalities were computed using the formula as mentioned in box.

Main findings

Most of the findings of the research are in line of the prevalent literatures, however, a few are plausible outcomes. Farm-household income shows variations both between and among groups. Farm income constitutes only one-fourth of income hence, off-farm income is crucial for the subsistence living of poor and middle class households. The former source of income contributes to nearly 45 percent income of rich households. Most of the poorest households lack complementary resources e.g. private trees, and livestock crucial for subsistence farming.

Cereal crops and animal husbandry respectively, contribute 40 and 46 percents of farm income of rich households. Similarly, salary alone constitutes one-third of monthly income of the rich households.

(1984) for Nepal.

The disparity in land ownership, especially of *Khet* (*Low land for paddy cultivation*) influences farm income accrued through the cereals. The poor and rich households get 17 and 58 percent of income of cereal crops respectively. The rich also reap more than four-fifth of the income from animal husbandry. Nearly, one-third monthly income of the rich households is in the form of salary from formal sector employment. Wage earning is a crucial source of supplementary income for the poor households. The income from private trees and community forest is almost equally shared in absolute terms, nevertheless these sources have a relative significance for poor households. Community forest income in terms of subsistence uses of forest products and wage earnings in forestry work accounts 12 and 3 percents of monthly income of poor and rich households

Table 1: Average farm-household monthly income (NRs) per household from various sources of income

Households ¹	Farm income				Off-farm income			Total
	Cereals	Trees	Animals	Forest	Salary	Self-employment ²	Wage earning ³	
Poor	395	157	112	166	783	1349	349	3311
Middle	568	235	118	143	1267	1492	224	4047
Rich	1298	267	1491	194	2372	1404	32	7058
Average	754	219	574	168	1474	1415	202	4805

Formula used to calculate total inequality is given on the last page of this article

A majority of sampled households, exclusively of Paharis have inherited a typical skill of weaving Bamboo (*Dendrocalamus* sp.) and Nigalo (*Arundinaria* sp.). Such self-employment, constitutes up to 40 percent of the income yields a substantial part of loaf and is crucial for livelihood of the poor. The poor households get only 18 percent of the income accrued through salary. This share is substantially less than reported by Islam

respectively. Various sources of farm-household income by wealth class are summarised in table-1.

Ninety percent of poor households have monthly income less than NRs 5000, that too accruing through bamboo-saddler works requiring substantial material and labour investments. However, two-third of rich household's income exceeds NRs 5000, suggesting a significant difference between them. Eighty percent of the poor, all *Paharis*, are employed in bamboo-saddler works while others deny the work, despite a lucrative income, due to the social taboo. Nearly half of rich households generate a monthly income of NRs 2000 from the mentioned work. There is no significant difference in self-employment by wealth class (table-2).

The poor households do not lag behind in harnessing community forest resource as the difference between the poor and the rich regarding income generation from community forest is not significantly different. The poor and rich households capture 33% and 39% of community forest income respectively. A comparison of

¹ Wealth ranking was employed to categorise households into poor, middle and rich groups. However, only rich and poor groups were considered for detail analysis. For more information refer to Sharma and Filius (1999).

² Self-employment income is mainly from bamboo-saddler (Betbans) work done only by Pahari (Tibeto-Burmese group of people, with less than eight thousand population in Nepal). The income is estimated from the value of the items produced. However, the material cost (e.g. bamboo, nylon, etc.) is not subtracted, the income is substantially over-estimated.

³ It is estimated that two third of the wage earning comes from employment in community forestry works.

various off-farm income sources and total monthly income by wealth class is presented table-2.

Impact on income distribution

Community forestry gives an opportunity for diversifying the sources of income. The decomposition analysis of income variances, under two different situation *viz.* with and without community forestry, is given in table-3. The calculation of variances shows a slight reduction of between-group inequality (i.e., rich and poor households) due to the community forestry. However, it increases 'within-group inequality' nearly to the same extent hence, the total inequality remains unchanged. Thus, despite a slight reduction of 'rich-poor' gap, community forestry simultaneously, increases 'within-group inequality' thereby failing to reduce total inequality.

The linkage of community forestry with poorest

Reflections

Community forestry income constitutes 13 and 3 percents of total monthly income of poor and rich households respectively which is statistically insignificant in absolute terms. The rich households also prefer and collect low value products especially because the opportunity cost of time for women, mainly involved in gathering the products, may remain same regardless of wealth. Hence, this finding is a deviation from an earlier study by Jodha (1986) that rich do not depend on the commons due to unattractive returns.

Inequality is often perceived as an inevitable phenomenon that gradually diminishes with accelerated growth (Kuznets, 1955, 1966; Selowsky, 1981). The development of community forestry alone will not alleviate inequality due to the weak linkage of former with resource poor people. Therefore, development endeavour in community

Table 2: Comparison of sources of off-farm income (NRs) between rich and poor households

Variables	Attributes	Significance
Self employment	no/yes If yes, < 2000/ > 2000	-
Salary and remittances	no/yes	-
Community forestry income	< 100 / 100 -300 / > 300	-
Wage income	no / yes	-
Total income	< 5000 / > 5000	***

Significance levels: - none, * < 0.05 ** < 0.01 *** < 0.001

households is weak because of the lack of complementary resources such as livestock and land resources. It restricts them from using substantial quantities of forest products thereby reduced level of benefit from community forests. Some of the poorest households are either not using or using only a few products, thereby, diminishing any prospect of 'increased forestry income' leading to a substantial reduction in inequality.

Table 3: Decomposition analysis of income with and without community forestry (CF)

Particulars	Monthly income in NRs	
	With CF	Without CF
Average monthly income		
Rich	7188	6980
Poor	3179	2939
Weighted average income	5464	5243
Standard deviation		
Rich	2655	2634
Poor	786	784
Income inequality (*10 ⁷)		
Within-group	0.428	0.422
Between group	0.394	0.400
Total inequality	0.822	0.822

forestry should resonate with philosophy of 'redistribution with growth'. There are two school of thoughts in development economics regarding development and income distribution *viz* redistribution before growth and redistribution with growth. The World Bank pursues the latter and interested readers are suggested to refer to Burki and Streeten (1978); Adelman and Robinson (1989).

Adams (1994) reports, "non-farm incomes from unskilled labour and government have equalising and dis-equalising effects on income distribution, respectively". The finding of this research shows "off-farm income such as the bamboo-saddler works has an equalising effect where as the salary, mainly from the government, has a dis-equalising effect on income distribution".

Conclusion

Although the findings show that community forestry slightly reduces 'rich-poor' gap but any hasty conclusion can also be erroneous and

premature. Based on the analysis of findings, the following are the main conclusions:

Community forestry has a critical role in the subsistence living of land-poor households. Furthermore, the rich households are also getting various products from the community forest.

The linkage of community forest and poor suffers from the lack of complementary resources with the latter.

Community forestry income also trickles to poor households however for a significant reduction of the gap, the mentioned linkage should be strengthened.

Recommendations

- Economic disparity should be reduced by establishing and strengthening the mentioned linkages.
- Economic proceeds of community forestry should be channelled in education and health.
- Study on the multiplier effects of community forest management on village economy is strongly recommended.

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The total inequality was calculated by using the following formula:

$$\text{Var}(X) = N_p/N * \text{Var}(X_p) + N_r/N * \text{Var}(X_r) + N_p/N (X_p - X)^2 + N_r/N (X_r - X)^2$$

Where, $\text{Var}(X)$ = total income inequality.

N_p/N , N_r/N = the relative size of poor (p) and rich (r) households within the population (value ranging from 0 to 1).

$\text{Var}(X_p)$, $\text{Var}(X_r)$ = the income inequalities within the poor and rich group of households.

X_p , X_r = average income for the poor and rich households.

X = average income for the total population.

Using the respective data, in the above formula, we get

'Within group inequality':

$$0.43 * 617396 + 0.57 * 7051204 = 265480 + 4019186 = 4284666$$

$$0.43 * 614830 + 0.57 * 6939816 = 264377 + 3955695 = 4220072$$

'Between group inequality' i.e., rich-poor gap:

$$0.43 * (3179 - 5464)^2 + 0.57 * (7188 - 5464)^2 = 3939266$$

$$0.43 * (2939 - 5243)^2 + 0.57 * (6980 - 5243)^2 = 2282619 + 1719786 = 4002405$$

It is to be noted that the ratio of poor to rich household was 0.43: 0.57.