Analysis

The public finance potential of community forestry in Nepal

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ABSTRACT

This paper explores the public finance potential of community forestry in Nepal on the basis of a comprehensive dataset on forest revenue and expenditures of 41 randomly selected community-forest user groups (CFUG) from Gorkha district. The results show that CFUG income distribution is highly skewed; the high- and low-income one-third of CFUGs in the sample account for 74.3 and 4.1% of the total income, respectively. CFUG income depends on age of the CFUG institution, CFUG membership size, and, in particular, on whether the community forest features the valuable timber species Sal (Shorea robusta, C. F. Gaertn.) and/or Chir Pine (*Pinus roxburghii* Sarg.). CFUG expenditure pattern is also highly skewed, with 85.2% of all public services and infrastructure financed by the one-third high-income CFUGs. CFUG financing of public services and infrastructure is shaped by income, management costs, and socio-political and contextual factors, such as whether the CFUG jurisdiction covers several wards and the presence of existing public infrastructure in the community. Finally, results show that the amounts of revenue generated through community forestry are negligible when compared to households' private gains from extraction of products from community forests, indicating a limited potential for redistribution of benefits under the current taxation system.

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1. Introduction

This article is concerned with equity aspects of local forest revenue collection and distribution in community-based forest management in Nepal. Community-based or participatory approaches to forest management are highly important to the fate of forests and people in the developing world. The share of forests in developing countries managed under community-based approaches is increasing and is currently estimated at around 22% (Sunderlin et al., 2008). Over the past few decades, the scope of the international research and policy debate on community-based approaches to forest management has developed from an original focus on resource conservation to include concerns for rural poverty alleviation (Brown et al., 2002; Ribot et al., 2010). This has resulted in an increasing body of research indicating that community-based forest management approaches tend to disfavour poor and forest dependent individuals, through the setting and enforcement of rules that limit their access to forest products (Adhikari et al., 2004; Lund and Treue, 2008; Saito-Jensen et al., 2010). This research also indicates that affluent community members tend to gain and maintain access under community-based management regimes.

Redistribution through local taxation of forest use is one way to counter the deepening of inequalities associated with community-based forest management. Taxation of affluent community members' use of forest products could finance pro-poor investments at the community level that would counter or off-set the negative effects of increased access restrictions. This aspect is ignored in many studies of the livelihood impacts of community forestry (Adhikari et al., 2004; Adhikari and Lovett, 2006). Research from various contexts has, however, demonstrated that the values redistributed in this manner can represent substantial contributions to the financing of much-needed public services and infrastructure at the local level in developing countries (Bigombe-Logo, 2003; Fométe, 2001; Lund, 2007). Hence, research that explores the public finance potential – by which we mean the magnitude of forest revenue collected and the degree to which it finances local public services and infrastructure – is warranted.

This study contributes to our knowledge about the public finance potential of community forestry in Nepal. Based on a comprehensive data set on CFUG income and expenditures from a random sample of 41 mid-Hill CFUGs in Gorkha District, Nepal, the study provides new empirical insights into the financial potential of community forestry. Furthermore, the study presents theory-led regression analyses of factors affecting CFUG income and the share of expenditures that finance public services and infrastructure at the local level. Findings indicate that the public finance potential of community forestry in the mid-Hills of Nepal is diminutive when compared to member households' private gains from harvesting of forest products. The CFUG

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income distribution is highly skewed and dependent on presence of high value timber species, the size of the CFUG membership, and the age of the CFUG. Financing of public services and infrastructure is also highly skewed towards high-income CFUGs and is furthermore shaped by management costs and socio-political and contextual factors, such as whether the CFUG jurisdiction covers several wards and the presence of public infrastructure in the community.

The paper proceeds as follows. Section 2 briefly outlines the existing evidence on the public finances of community-forestry in Nepal. In Section 3, the study area and data collection methods are presented. Section 4 provides a description of the income and expenditure models used to draw out the factors that affect income and expenditure patterns of the CFUGs. In Section 5 the results are presented focusing on descriptive statistics and the income and expenditure model results. In Section 6 the results are compared to findings in previous studies and their implications are discussed with an aim to draw out relevant policy recommendations. Finally, in Section 7 we provide conclusions. All figures are given in Nepal Rupees (Rs).[1]

2. Background and Existing Evidence

In Nepal, the community forestry process has implied the devolution of powers to community forest user groups (CFUG) to collect, retain and redistribute forest revenue from products from community forests. The CFUGs are self-formed associations that elect executive committees for the day to day management and administration of the community forest. CFUGs also create their own constitutions and operational plans which set out the rules governing their operation and the forest management objectives and rules, respectively (Adhikari et al., 2004). The process of devolving responsibilities and rights to manage forests in Nepal dates back to the 1970s. The current community forestry process was initiated in the early 1990s with legal reforms and a nation-wide effort at implementation. As of today, more than 1 million ha of forest, corresponding to one-fourth of the total forest area, has been handed over to approximately 14,000 CFUGs (Blaikie and Springate-Baginski, 2007). The effects of devolved forest management on resource conservation and regeneration in Nepal have been thoroughly studied, and the general picture is one of forest conservation and regeneration (Bhattarai and Conway, 2008; Gautam, 2007, Gautam et al., 2004, Gilmour and Nurse, 1991, Nagendra and Gokhale, 2008, Schweik et al., 1997, Webb and Gautam 2001). The effects of community forestry on rural livelihoods and equity have also been subject to research. A number of studies have looked into distributional equity, suggesting that the poorest benefit the least from community forestry for a number of reasons. The poorest may be excluded from access to subsidised products and user rights through CFUGs because of high membership fees (Banjade et al., 2004). In some areas, mainly the rich buy timber and thus benefit from the highly subsidised timber prices, while the pricing policy implies that little revenue is generated for redistribution (to the poorest) through the CFUG fund (Dhakal and Masuda, 2009). Others have shown how the poorest benefit the least from community forestry as they shoulder more of the transactions costs of management relative to value gained from access to forest products (Adhikari and Lovett, 2006). In this context, a number of studies have demonstrated the amounts of public revenue generated and the various activities it finances (Errboe, 2009; Kanel and Niraula, 2004; Nirmal et al., 2009; Pokharel, 2009). The significance and potential of the redistribution of forest values by forest revenues remains, however, poorly documented and controversial. First, researchers argue that the community forests of the mid-Hills – as opposed to the Terai where extraction of Sal timber provides large incomes to

rural communities (e.g. Dhakal and Masuda, 2009; Iversen et al., 2006) – are simply too small and of too little value to have any significant impact on rural livelihoods (Ojha et al., 2009). Hence, research on the distribution of the values becomes a search for the diminutive and insignificant. Second, very few studies have explored the trend in CFUG revenues and expenditure patterns over time, implying that our knowledge often rests on segmented data and snap-shots (e.g. Dhakal and Masuda, 2009; Errboe, 2009). Third, the majority of studies on community forestry revenues in Nepal are from either small (e.g. Dhakal and Masuda, 2009; Errboe, 2009) or larger, but censored (Pokharel, 2009; Lund et al., 2010) samples of CFUGs, which inhibits generalisations beyond the sample. Two large-scale studies, each covering more than 1000 CFUGs, provide good points of reference for knowing the absolute income potentials and expenditure patterns of CFUGs (Kanel and Niraula, 2004; Nirmal et al., 2009). Neither of these two studies, however, provides time series data or details beyond reporting income and expenditure. Finally, empirical studies on patterns of public income and expenditure are limited. Pokharel (2009) establishes a positive correlation between financing of pro-poor activities by CFUGs and the proportion of low-caste households in CFUG membership. Other factors of relevance to redistribution of forest values through forest revenue, however, remain unexplored.

3. Study Area and Methods

The study was carried out in Gorkha District that forms part of the mid-Hills of the Western Region. The mid-Hill region of Nepal is centrally located, extending from the southern slope of the main Himalayan range to Mahabharat range, mostly between 700 and 4000 m altitude, and accounts for about 42% of total land area of the country (LRMP, 1986).This district was chosen purposively to represent the socio-economic conditions in the region and national mid-Hill areas. Gorkha District appears representative in terms of the socio-economic characteristics of mid-Hill districts in the Western Region of Nepal, although with slightly lower levels on some indicators of welfare, such as literacy, infrastructure, and development expenditure (Table 1). In terms of national representativeness, the Western Region is characterised by relatively good infrastructure and higher average per capita income (NIDI, 2006). Accordingly, Gorkha may be quite representative at the national level.

Table 1
Selected statistics for Gorkha District and mid-Hill districts in the Western Region.

	Gorkha District	Average of mid-Hill districts in Western Region
Altitude range (masl)	488–8156	642–5444
Forest cover (%)	28	43
Population density (cap/ha)	80	182
Number of community forests	361	339
Community forest area in total forest area (%)	17	21
Literacy rate (Age >6) (%)	54	60
Per capita food production per day (kilo calories)	3432	3273
Number of livestock per farm household	7	6
Sum of motorable road per 100 square kilometre (km)	4	12
Per capita development budget expenditure (Rs)	622	829
Share of households:		
Using wood for cooking (%)	81	78
Using liquefied petroleum gas (%)	8	7
Using biogas (%)	3	4
With access to safe drinking water (%)	64	79
Member of at least one CFUG (%)	74	68
Have toilet facilities (%)	55	61
Owns less than ½ ha of farmland (%)	46	45

Sources: DoF (2008), and GoN (2003, 2008).

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[1] 1 USD equals approximately 70 Nepal Rupees (Rs) (2008).