How Costly is the Collective Action? Transaction Costs of Community Forestry in Nepal

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1. Introduction

Recognizing the importance of community-based approaches towards natural resource management, devolution of authority to groups of resource users to manage forest resources has been the main thrust of the Community Forestry (CF) program in Nepal. Since the late nineties national forests are handed over to forest user groups (FUGs) under a community-based property rights regime. About 25 percent of potential forest areas had already been handed over to 14,000 FUGs by 2005 in different parts of the country, mainly in the mid hills that accounted about 1.2 million hectares of forested land (Kanel, 2005). Although local control over forest resources is now regarded as a win-win solution for environment and local development in the middle hills of Nepal, this has not been a universal result as community forestry does not have the same success everywhere (Nightingale, 2002). Some studies have highlighted equity and distributional problems, such as the distribution of costs and benefits particularly the transaction costs incurred by households in CF program. Transaction costs in CF are related to the cost of labour in scheme participation and are mainly incurred due to time spent in a variety of meetings, information collection and communication, and direct monetary expenses incurred for travel, communication, information. Including transaction costs in an economic study may enable us to explore the nature of cost and benefits, and their impact on different stakeholder groups.

Most institutional analysis assumes that an institution exists because it minimizes costs, without examining the implications of these institutions on the level of transaction costs. From an institutional economics perspective this omission could lead to failure of communal efforts. Following Dahlman (1979), transaction costs of community forestry can be divided into three broad categories: (a) search and information costs, (b) bargaining and decision costs, and (c) policing and enforcement costs. Search and information costs are incurred as a result of participation in initial community meetings in identifying potential users of CF, negotiating among potential members, forming FUG and forest users committees (FUC), and gathering information about physical attributes of resource and attributes of the community. Bargaining and decision costs refer to costs related to the preparation of a specific operational plan of CF including designing management institutions related to resource management and appropriation. The transaction costs of policing and enforcement refer to monitoring costs which incurred during monitoring and enforcement of agreed rules related to forest use, conflict management, monitoring costs of forest protection, record keeping, and resolution and sanctions for rule violation.

The study presented here is an attempt to quantify the extent of transaction costs incurred by households in the context of community forestry management in Nepal. We do this by asking the following research questions. What are the elements of transaction costs of CF incurred by households? How are these costs distributed across households with different socio-economic status? And how significant are these costs as a percentage of total resource appropriating costs? Our working hypothesis in this paper is that transaction costs could be a significant part of resource appropriation costs incurred by households. The costs can differ between income groups as they are influenced by socio-economic attributes of households and characteristics of the resource using community.

2. Study sites and data collection

Fieldwork for this study was undertaken in Kavre Palanchok and Sindhu Palanchowk districts of the middle hills of Nepal. These two districts have been the focus of national and international attention for implementation of CF. In order to collect household data, sample households were divided into

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three income groups- poor, middle and rich based on land holding, livestock ownership, and income from off-farm agricultural activities. About 20 percent of households from each income group were randomly selected giving a total number of 309 households for the structured questionnaire survey. Questions on transaction costs were mainly focussed on participation of households in various community meetings such as: (1) identification of forest users, (2) attending forest user group assembly meetings, (3) forest user group committee meetings, (4) attendance in meetings related to make decisions on resource maintenance activities, (5) forestry related community development activities, (6) forest protection and monitoring activities and (7) time and resources committed to travelling and communicating these activities which are directly related to enforcement of community-based property rights over the community forest. Open-ended discussion with FUG and FUGC members provided an opportunity to review the FUG's general procedures, contents of the meetings, records and mechanisms of information flows, decision-making processes and other concerns about the nature of transaction costs incurred in community forestry activities. Transaction costs were converted in monetary terms in the final analysis by using the village wage rate multiplied by total time invested in community activities. Since the wage rate fluctuates across seasons, we have taken the average farm labour wage rate prevailing throughout the different seasons in the village.

3. Results and discussion

It appears that monitoring is the most important activity for community forestry followed by implementation and information related tasks. These activities take up the bulk of time as they are continuous activities and crucial for maintenance of the resource and institutions. Since social conflicts can emerge in a number of forms within user groups including conflicts between different interest groups, disagreements between the executive committee and the general body of users and conflicts between user groups and outsiders, community meetings are general features of all FUGs. On average, each household spends about a month within a year for start up and recurrent annual transaction cost related activities.

We observed that transaction days of resource management are higher for better off households than that of middle and poor income groups. Further, richer households invest slightly higher transaction days at the initial stage of community forestry activities. This indicates that the economically and socially privileged sector of society contributes the most to commons management. Transaction costs for rich households are relatively high, rising to the equivalent of 64 labour days annually for some household heads who are engaging intensively in different aspects of forest management. We further calculated the transaction costs incurred by households in monetary terms. As discussed earlier, transaction costs of forest management are lower for the poorer households. Transaction costs for rich and elite households are relatively high due the high number of days spent on CF activities. We also found the differences between the villages in the level of transaction costs incurred by each income group. Since transaction costs of forest management are also a function of social capital within the community, variation in transaction cost days in different forest user groups can be explained by variation in social capital and forest conditions in these communities.

How important are these transaction costs relative to the resource appropriating costs incurred by user households? As we discussed earlier, resource appropriating costs are those costs incurred by households during collecting, harvesting and transporting forest products from the community forest to house. We found that transaction costs as a percentage of resource appropriating costs are significantly higher for poorer households than those of middle-wealth and richer households. In higher income groups, users are putting more resources into harvesting various intermediate forestry products and they also employ hired labour for various forestry operations. So the average forest operation cost for richer households is far greater than that for poorer households. Variation in forestry operation costs for the three different stakeholder groups can also be explained by economies of scale of these groups in common property forest use. In this case, transaction costs were relatively low as a proportion of resource appropriating costs, usually less than 15 percent for the rich. However, when poorer users are getting very few products (mainly firewood as opposed to other intermediate products like fodder, leaf litter and cut grass), transaction costs as a proportion of resource appropriating costs can be significantly higher - up to 26 percent of total costs.

4. Conclusions and policy implications

The findings from this study raise two different points on transaction costs in community-based resource management. On one hand, it appears that it is the richer members of the society who bear a larger proportion of decision-making costs. This is similar to the argument made by Olson (1965) who posits that better off members may bear a greater portion of costs associated with cooperative action since they are the ones who will better internalise the positive externalities generated from the management of public goods. Baland and Platteau (1997) also reinforce the theoretical possibility of Olson's hypothesis especially when management of CPRs involves high start up costs. On the other hand, comparing the level of household recurrent annual transaction costs with the total costs of resource appropriation reveals that transaction costs are a significant share of resource appropriating costs. It is particularly important for poorer stakeholders whose share of transaction costs appears to be 26 percent of resource appropriation costs. We argue that while conducting economic analysis of CF management, the significance of transaction costs should be carefully considered (Zhang, 2001; Kant, 2000). Including these prices in an economic study may enable us to explore the nature of cost and benefits, and their impact on different stakeholder groups.

The results suggest that CF institutions are geared to providing benefits to better off members (Richards et al., 1999). To compensate the poor in return of their higher transaction costs, there should be some sort of provision in the forest operational plan to enable poorer people to have direct access to NTFPs and other cash products so that they are not made worst off from the institutional change. Poorer households may not be able to meet transaction costs in the long run if their interest is not properly represented in the forest operational plan. Lack of understanding the costs borne by distinct sub-groups within the community promotes inequitable access to natural resources which may undermine the long-term sustainability of management institutions by those who facing disincentives from such management regimes.

This is not to say that community management of forests compares unfavourably with state controlled management. Transaction costs of forest monitoring could be significantly higher when the forest needs to be guarded by government foresters. Local communities have an in-built capacity to control harvesting as well as effectively monitor illegal felling through local arrangements, so overall transaction costs will be lower under community management for the same level of control. Moreover, employing forest guards through the state forest department to look after these isolated patches of forest will add another tax burden for those who are already poor.

Empirical study of the interaction between CPR institutions and transaction costs provided in this study enables policy analysts to determine the importance of institutions and transaction costs in local level resource management. Moreover, proper understanding of the levels of transaction costs in community-based resource management has important welfare implications especially for enhancing the livelihood security of poorer households, as they should not be made worst off from institutional changes in resource management. If poorer households are not well compensated by increasing their access to forest resources, social conflicts may emerge and threaten sustainability of management institutions. Since transaction costs of community-based forest management may differ between villages having different socio-economic, biophysical and ecological characteristics, ex ante evaluation of possible resource regime and associated transaction costs is a prerequisite to designing an equitable form of forest management regime. Though this study could not compare the transaction costs of resource management under different property regimes (state, co-management, community and private management), further research on comparison of transaction costs associated with different forms of property regimes may help to develop a more generalized theory of transaction costs and their significance in managing the local commons.

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