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Incentives for community participation in the governance and management of common property resources: the case of community forest management in Nepal

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ABSTRACT

Devolution of resource management access rights, from the state to local communities, has been an important policy tool in Nepal over the last two decades. One of the major goals of this policy is to increase the participation of local users in decision-making and for them to gain benefits from the forests. However, a lack of meaningful participation amongst users in resource governance has resulted in a failure to include socially marginalised groups in community decision-making. The main objective of this research is to explore what incentives are most likely to enhance the effective participation of local users in the governance and management of common property resources. In this study of community forestry management regimes in Nepal, access to resources and benefits, and enforcement of legal property rights are identified as the key influential incentives that determine the effective participation of users in resource governance. This study proposes proportional allocation of the most productive part of a community forest to a sub-group (formed within a user group) of the poor and disadvantaged members, and the transference and enforcement of legal property rights to this sub-group over the allocated forest, in order to protect their access rights to resources and to secure their greater participation in resource governance.

1. Introduction

The devolution of resource management and access rights, from the state to local communities and user groups, has been an important policy tool in Nepal over the last two decades. The development of community forest user groups (CFUGs) as participative institutions is one of the most widespread and rapidly expanding attempts to encourage participatory devolution in Nepal under the community forestry programme. One of the major goals of this devolution policy, as seen in community forestry in Nepal, is to increase participation of local users in decision-making and for them to gain benefits from the forests. The community forestry programme is often referred as a successful model for participatory, community-based forest management in Nepal for achieving sustainable forest management, and its policy is considered to be one of the most progressive forest policies in the world (Bhatia, 1999; The World Bank, 2001). Nepal's community forestry programme is probably the largest sectoral domain of governance, in terms of population size directly engaged as its members. Moreover, community forests in Nepal – the forest resources and ecosystem services – can make a significant contribution to national economic growth, in addition to reducing the poverty of its users.

However, a lack of real participation amongst users in relation to forest governance and management is significant. Community forestry, in practice, fails to involve socially marginalised people in community decision making and thus, it does not reflect the needs and aspirations of the poorer and marginalised groups within these communities (Gautam, 2006). Although the Act and the Regulations have brought about a large increase in the rate of handover of these community forests, the programme is still not successful in achieving the people's effective participation in the governance and management of these community-based resources (e.g., see Agarwal, 2001; Agrawal and Gupta, 2005; Buchy and Subba, 2003). This situation could be a result of poverty, the pressing need to make a livelihood, or a lack of awareness that their participation is important for community forest management and development.

The two main objectives of community forestry, namely, improving the livelihoods of the rural users and sustainable forest management, are less likely to be achieved without a greater participation of users in the governance and management of community-based resources. Failure to achieve the effective participation of all sections of the local user community in the programme results in costs, in terms of forest resource degradation and the compromising of medium and long-term sustainable development. Nepal has come to be regarded as a model of successful community forestry development, so that both success and failure in this country may have implications that spread far beyond Nepal's borders. Therefore, it is of considerable interest to explore the

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incentives[1] offered to local communities, as an attempt to encourage them to participate in common property resource governance and management.

This study aims to systematically examine whether the community forest management regimes in Nepal have actually provided communities with sufficient incentives to make them willing (and economically able) to involve themselves in the governance of common property resources. It identifies which incentives best address and ensure the people's willingness and ability to participate, by estimating models of users' discrete choice between participation or refraining from participation. This study specifically addresses the research question: *What incentives are most likely to enhance the effective participation of local users in the governance and management of common property resources?* Two specific research objectives have been identified in order to address the above research questions: (a) to determine the relationships between different incentives and the level of participation of user group members; (b) to explore how households might respond to any changes in the incentives, in terms of their decision to participate in common property resource governance; and (c) to propose/recommend how organisational incentives can be better integrated, in order to induce more effective participation of users in the governance and management of common property resources.

The basic theoretical argument of this study is that the incentive system is regarded as the principal variable that affects an individual's behaviour, in regards to participation in the governance and management of community-based resources. Differences in the type of users' involvement are a function of organisational incentives and individuals have different preferences for (and response to) the incentives offered by an organisation. An individual will have a higher probability of participation in common property resource governance and management, if s/he has a higher predisposition to incentive (Knoke, 1988). An individual within a community can have the ability to influence a decision if s/he participates more. Increased participation is linked with improved access to information and followed by improved benefits, which are directly linked to a reduction in poverty or improved livelihoods (e.g., Agrawal and Gupta, 2005). User households, who participate more fully in the governance and management of community-based resources, are more likely to benefit from the forests, because they are able to exercise their voices. Conversely, households that participate less will receive fewer benefits, due to not exercising their voices (Agrawal and Gupta, 2005).

2. Analytical model, study variables and data sources

A two-stage model is constructed, in order to estimate the conditions under which a household participates in the governance of common property resources. Firstly, an index of participation is constructed, as a proxy for participation in the governance and management of common property resources, by the use of a factor analysis on the indicators of participation, to identify different choice situations. Secondly, because the index of participation is qualitative and discrete in nature, an ordered probit model is constructed, to identify the relationship between different incentives and the level of participation of user group members.

2.1. Constructing an index of participation

In the context of common property resource governance, a member has various choices situations where s/he can decide whether to participate or not (Lise, 2007). Knowledge of whether a person is a member of a user group (or not a member) is not sufficient for measuring the extent of users' participation, because it does not account for changes in perception during the participation process. Some members may be involved very actively but still acquire less benefits, whilst others only reap the benefits without any active participation. To separate these different groups of people, in terms of their extent of participation, it is necessary to quantify participation, and this can be done by constructing an index of participation. The index of participation, which is used as the dependent variable for investigating the relationship between the incentives and participation, was constructed by employing a factor analysis out of a highly correlated set of indicators of participation that measure users' participation (Table 1). These indicators of participation comprise the key factors for strengthening resource governance and improving the livelihoods of the user groups.

The membership length was recorded as the actual number of years that a household has been a member of the CFUG, whilst representation on the executive committee was recorded as *Yes* or *No*, depending on whether at least one member of the household was represented on the executive committee of the group. The answer to the users' rating on their level of participation in different group activities was framed in five distinct levels: very low or nominal participation; low or passive participation; average or activity-specific participation; high or active participation; and very high level or interactive participation to describe the extent of participation (Agarwal, 2001; Pretty, 1995). The respondents were asked to rate their responses on a five-point Likert scale from 1 to 5, with 1 representing *No* (or very low level of participation) and 5 indicating a very high level of participation.

An iterated principal factor analysis was performed on the six participation indicator variables of each household, to construct the index of participation, in order to qualify and quantify users' level of participation in the governance of common property resources. The initial prior communalities were set at 1, to initiate the iterative process of principal factor analysis (Table 2). A general rule of thumb suggests that all factors with an eigenvalue larger than 1 (commonly known as Kaiser criterion) should be used in the analysis (Lise, 2007; Manly, 2005). Here, the eigen-analysis of the correlation matrix has one eigenvalue greater than one and another being only marginally smaller than 1, suggesting a two-factor solution: the total variation in the data will be entirely explained by two common factors, and the factor model fitted is reasonably appropriate.

As a rule of thumb, variables with coefficient above 0.5 are considered as dominating factors (Lise, 2007; Manly, 2005). Considering the large and moderate loadings, it can be seen that the first factor, Factor 1, represents a combination of all indicators, except membership length. It has high positive loadings for rating of participation at meetings (0.91179) and participation in decision-making (0.93694). It also has a moderately positive loading on EC representation (0.69708), the rating of participation in implementation (0.67621) and overall benefits (0.74594). Since these attributes focus on users' presence and involvement in governance, Factor 1 can be labelled as active participation and this factor accounts for approximately 76.6% of common variance. The second common factor, Factor 2, which explains approximately 23.4% of the common variance, can be regarded as a membership length orientated effect that has a high factor loading of 0.99018. It can be seen that the variable *membership length* is almost entirely accounted for by Factor 2 alone. The loadings of the remainder of variables can be ignored. Since this variable implies length of membership, it is termed passive participation.

The participation index is constructed by using factor scores, which were computed directly by the factor analysis. A weighted factor score (F_{12}) was computed by taking a weighted sum of the factor scores: weights being the proportions of common variance explained by each factor. These F_{12} factor scores were then normalised to take values between 0 and 1. The respondent households were then grouped by the participation index category, based on their normalised factor scores, such that the higher the factor score, the higher is the household participation index. Natural cut-off points of the normalised factor scores were used to define the participation index. Although the natural cut-offs between index 2 and 3, 3 and 4, and 4 and 5 are distinct, the break point between index 1 and 2 is marginal. The cut-off point

[1] Incentives are defined as those mechanisms that positively impact on an individual's attitude and behaviour, which then motivates their active participation in collective arrangements for improved governance and management of their forest resources.