

Socio-Economic Heterogeneity and Income Distribution: Evidence from Common Property Resource Management

Bhim Adhikari[‡]

The author assesses the relationship between socio-economic heterogeneity and equity of resource distribution by reviewing the theoretical literature. He finds mixed results as regards whether resource management and utilization under community based management is equitable and has the potential for positive impact on the livelihood of very poor and marginalized section of the community. He concludes that inequality among resource users has negative impact on the local level collective action. Finally, the author relates the theoretical review findings with observations in community forestry in Nepal, and concludes that equity impact is not positive as a result of inequality among resources users.

Introduction

Development of local economy while managing common pool resources has become an integral part of sustainable development policy in developing countries in the past few years. This interest has emerged largely as a consequence of the widespread failure of centralised government schemes to provide sufficient incentives to resource users to manage local resources on a sustainable basis. It is argued that the organised civil society can play an important role to address many economic issues like internalisation of ecological externalities, the provision of local public goods, and the poor's access to credit that neither the market nor the state can reliably solve (Molians, 1998). Recognising this, much work has been initiated to support community-based resource management with a focus on poverty alleviation and improvements of the local resource base at the community level. Participatory resource management is often seen as an appropriate solution to reducing resource degradation and it is generally assumed that granting property rights over the local commons would ensure the equitable and sustainable use of environmental

resources. However, a burgeoning literature on community-based property rights has indicated a mixed result as regards whether resource management and utilisation under community-based property rights regimes is equitable and has the potential for positive impact on the livelihood of the very poor and marginalized section of the community.

Recent economic literature suggests that success of the property rights regime depends upon the congruence of ecosystem and governance boundaries, the specification and representation of interests, the matching of governance structure to ecosystem characteristics, the containment of transaction costs, and the establishment of monitoring, enforcement and adoption processes at the appropriate scale (Eggertsson, 1990; Ostrom, 1990; Bromley, 1991; and Hanna, 1992). More importantly, the equity and distributional aspects of CPR regime is considered to be one of the major determinants of long-term sustainability of the commons. Hanna et al. (1995) argued that property rights regimes are a necessary but not sufficient condition for the equitable and efficient use of environmental resources. Libcap (1989) suggested that while the aggregate gains from reducing common pool problems or promoting economic growth through the definition or redefinition of property rights are unlikely to be controversial, the distribution of wealth and political power inherent in the proposed rights structure will be a source of dispute. Although there has been a flurry of theoretical and empirical research on determinants of successful collective action, none of it has yet paid much attention to distributional implications and equity property of community-based commons institutions. Most of these studies focus on communities as opposed to households. Decision and actions of individual households have been given less attention. It was assumed that communities would collectively manage local level natural resources because of the substantive benefits to be derived from these



Buildings can sometimes indicate the socio-economic class of the household in the hills of Nepal.

[‡] Doctoral Fellow, Department of Environmental Economics and Environmental Management, The University of York, United Kingdom.

resources. In other words, if property rights over forest resources are granted to the community, the possibility of potential economic benefits will entice communities to practice an efficient and equitable management regime. However, in many cases, equitable access and use of common property resources within the community has not been clearly demonstrated. In response to this, theoretical development in common property resource management suggests that given the more likely scenario of socio-economic heterogeneity within spatially defined community groupings, participation in community decision-making can be skewed in favour of more powerful subgroups at the cost of vulnerable sections of the community.

Heterogeneity and Collective Action: Theoretical Evidence

Theory on the relationship between socio-economic heterogeneity and distributional implications of community-based resource management, particularly in respect of issues related to local level collective action, is getting much attention in both the economic and social science literature. There is widespread realization that productivity-enhancing CPR governance is difficult when appropriators have heterogeneous objectives. The sources of heterogeneity are diverse, and include differences in opportunity cost, appropriation skills, caste, gender, language, ethnicity, initial endowment, political influence, technology and local differences (Hackett, 1992), which might influence the cost-benefit sharing arrangement and thus equity of resource distribution. Boyce (1998) argued that inequality may have a negative effect on local level collective action since inequality may increase the scope for a powerful minority to impose rules of the game that benefit them at the expense of the large majority in the community. Greater homogeneity, on the other hand, promotes both equity and efficiency by facilitating the adoption of more coordinative and cooperative arrangements at the local level. In his simple theoretical model, Kanbur (1992) investigated the role of group heterogeneity in the success or failure of common property resource management. He argued that cooperative arrangements are less likely to arise when agents are highly heterogeneous and existing arrangements are also likely to break down as a group becomes more heterogeneous. Lise (2000) suggested that intra-group inequality could undermine the willingness of poor people to participate in collective action since elite-devised management regimes rarely serve the very survival needs of the poor.

Bardhan and Dayton-Johnson (2000) noted a U-shaped relationship between inequality and commons management. Very high and very low levels of inequality are associated with better commons performance, however, mid-range levels of inequality are associated with poor outcomes. A number of researchers have focused on economic inequality as

a major source of heterogeneity, that is to say inequality in wealth or income among the community members involved in collective action. However, there are other kinds of inequality within a resource dependent community such as inequalities in the sacrifices community members make in cooperating with commons- management regime, inequalities in the benefits they derive from such regimes, and inequalities in outside earning opportunities ("exit options"). In addition to this, ethnic and social heterogeneity, and environmental or state variables like low levels of trust or social cohesion might also affect equitable use of common property resources. In this regard, inter-related "commons outcomes" that might be affected by inequality include resource conservation, maintenance of infrastructure, the supply of local institutions, monitoring and enforcement of regulations, conflict resolution, equity of resource distribution and empowerment of resource users.

In their theoretical modelling, Baland and Platteau (1999) investigated the impact of inequality on the ability of resource users to undertake successful collective action with special reference to overexploitation of common property resources. They argued that in the voluntary provision problem, inequality has an ambiguous impact on the efficient outcome, while in regulated settings it tends to reduce the acceptability of available regulatory schemes, which makes collective action more difficult. Changes that disequalize distribution of access rights through the definition or redefinition of property rights will have two different effects. First, the agents who benefit from such a change have a larger stake in the common property resources and therefore have a greater incentive to take part in conservation efforts. Second, the same change has a corresponding disincentive effect on the other agents whose endowments have been reduced. Since this increased inequality redistributes incentives in different directions, it may have ambiguous effects on the ability of users to initiate collective action towards conserving and devising an appropriate mechanism to ensure the sustainability of the commons. Under such circumstances, a homogeneous group may better succeed in designing and enforcing equitable



A stone-wall house in the high Himalaya with a stack of firewood on the rooftop.

conservation measures than a heterogeneous one.

Conclusion

Though there is still on-going discussion on the role of socio-economic heterogeneity and equity of resource distribution, a number of case studies have provided empirical evidence that inequality among the resource users has negative impact on the local level collective action. Since members of user groups will often have somewhat different preferences regarding resource management, or assign different priorities to the various objectives of resource management, socio-economic heterogeneity among the resource users might be associated with different degrees of control and access over the local commons. Adhikari (2000) observed that equitable and sustainable management of forest resources under community-based property rights in the middle hill of Nepal is dictated by some powerful and wealthy resource users who place stringent limits on the poorer users who are not able to participate and benefit from the collective action. This study suggests that the impact of common property forest management seems to be ambiguous. While common property forest management seems to be good for the forests and local environment, fundamental questions remain about the equity impacts of community forestry on the very poor and marginalized section of the community. An understanding of these limitations on the community-based property rights structure can help identify more appropriate property rights and regulating options beyond community level that ensures interests of the left-out sections of the community well represented in forest planning and management decisions. Since the nature of property-rights regimes and the distribution of access to natural resources affect both the level of poverty and, the quantity and quality of the environmental resource base in the long-run (Dasgupta and Maler, 1991), property rights institutions will have to be more egalitarian in order to avoid unilateral appropriations of the commons. In this respect, common property institutions will have to be evolutionary in nature in response to underlying economic, political and cultural circumstances of the community.

References

- Adhikari, B. (2000) "Property Rights and Natural Resources: Socio-economic Heterogeneity and Income Distribution in Common Property Resource Management in Nepal". Paper Presented in Beijer Institute advanced Workshop on Property Rights Structure and Environmental Resource Management, 19-28 March 2001, Luxor, Egypt. Organized by Beijer International Institute of Ecological Economics, Sweden and MacArthur Foundation USA.
- Baland, J. and J.P Platteau (1999) "The Ambiguous Impact of Inequality on Local Resource Management". *World Development*, Vol. 27 (5), pp: 773-788.
- Bardhan, P. and J. Dayton-Johnson (2000) "Heterogeneity and Commons Management". Draft Paper Prepared for the National Research Council's Institutions for Managing the Commons Project. Department of Economics, University of California, Berkeley, USA.
- Boyce, J. (1988) "Technological and Institutional Alternatives in Asian Rice Irrigation". *Economic and Political Weekly* 26 March, A6-A22.
- Bromley, D. W. (1991) "Environment and Economy: Property Rights and Public Policy". Oxford, UK, Oxford University Press.
- Dasgupta, P. and K. G. Maler (1991) "The Environment and Emerging Development Issues". *Proceeding of the World Bank Annual Conference on Development Issues*.
- Dayton-Johnson, J. (2000) "Determinants of Collective Action on the Local Commons: A Model with Evidence from Mexico". *Journal of Development Economics*, Vol. 62, pp: 181-208.
- Eggertsson, T. (1990) "Economic Behaviour and Institutions". Cambridge, UK, Cambridge University Press.
- Hackett, S.C. (1992) "Heterogeneity and the Provision of Governance for Common-Pool Resources". *Journal of Theoretical Politics*, Vol 4 (3) pp: 325-342.
- Hanna, S., C. Folke and K. Maler (1995) "Property Rights and Environmental Resources". In S. Hanna and M. Munasinghe (eds.). *Property Rights and the Environment: Social and Ecological Issues*. The Beijer International Institute of Ecological Economics and The World Bank.
- Libecap, G. D. (1989) "Distributional Issues in Contracting for Property Rights". *Journal of Institutional and Theoretical Economics*, Vol. 145, pp: 6-24.
- Lise, W. (2000) "Factors Influencing People's Participation in Forest Management in India". *Ecological Economics*, Vol. 34, pp: 379-392.
- Molians, J. R. (1998) "The Impact of Inequality, Gender, External Assistance and Social Capital on Local-Level Collective Action". *World Development*, Vol. 26 (3) pp: 413-431.
- Ostrom, L. (1990). "Governing the Commons". Cambridge, UK, Cambridge University Press.

