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Discussion Paper BRIEFS

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Discussion Paper 87

Changes in Intrahousehold Labor Allocation to Environmental Goods Collection: A Case Study from Rural Nepal, 1982 and 1997

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This study explores the impact of changes in environmental conditions on household labor allocation to the collection of environmental goods for a sample of rural Nepali hill households. Households in rural areas of most developing countries often rely very heavily on the surrounding environment for goods such as water, wood, and livestock fodder. Frequently these and other environmental products are collected from local common forestland, a task that in many areas is predominantly carried out by women. Given the increasing pressure on biomass resources in many developing areas and the common gender division of collection labor, there is concern that women in particular will bear the burden of increases in resource scarcity by having to spend more labor time and effort to collect forest products.

This concern would appear to be a particularly valid one in the hill region of Nepal where women may spend several hours per day collecting fuelwood, water, and cut grass or leaf fodder for livestock, and growing populations are exerting more pressure on commonly owned forest resources. Studies using Nepal data from 1982/1983 indicate that households respond to increasing costliness of environmental goods, at least in the short run, by consuming less of them and devoting more female labor to their collection. An important line of questioning is whether this is still the case after enough time has passed for households to undertake other responses to the costliness such as planting trees on their property. A related question is whether women's labor burdens will be lightened more than those of men and youth if local common environmental resources are improved.

In order to address these questions this study examines changes in intrahousehold labor allocation to the collection of environmental goods over time and in response to changes in local environmental conditions for a sample of Nepali hill households. An empirical analysis of the changes in labor allocation patterns and how these relate to changing environmental conditions will contribute to a greater understanding of how policies that influence the environmental resource base may influence

the welfare of different groups within households. This is of particular interest in Nepal where much policy emphasis currently is being placed on local forest resource management for improvement of local common forest resources.

Households and Forest Resources in the Hills of Nepal

The data used in the analysis are from household surveys conducted in 1982/1983 and 1997 in six villages in three hill districts of Nepal. This study has the advantage of resurveying the same households after a 14-year period that allows for an assessment of the effects of environmental changes over time. Common forest resources in the survey sites have changed over this period, some for the better, some for the worse. Additionally, although two of the survey sites had some community forestry management in 1982/1983, all sites with a community forest now have a formal forest user group (FUG). In 1993 Nepal passed the Forest Act, which recognized local FUGs as institutions with property rights over community forests. Management by FUGs generally involves restricting what can be taken out of the forest and exacting penalties on those who break the rules, although what the local FUGs do in practice and how effective they are varies between sites.

The households in the survey villages are mostly small-scale agriculturalists producing primarily for home consumption. Almost all of the households in the sample own their own farmland, although average landholdings have dropped significantly between 1982 and 1997. Most of the sample households also own some

combination of goats, cattle, and water buffaloes. Hill households traditionally have relied quite extensively on local common forest areas for fuelwood, water, leaf fodder, and grass. Most energy consumption comes from fuelwood, which is primarily used for cooking. Water is collected for household consumption. Leaf fodder and cut grass are important sources of livestock feed, and are seasonal in nature. Cut grass is the preferred livestock feed, but it is generally only available in the monsoon

the poorest households in a community are likely to bear the highest costs of environmental degradation

season. In the dry season households rely on leaf fodder. Collecting fuelwood, grass or leaf fodder, and water can take up many hours of a household's time in a day. The bulk of this time typically comes from adult women in the household. The rest of the household collection time comes from adult men or from older children.

Results

Analysis of the effect of forest resource scarcity on household collection and consumption of environmental goods shows that households in relatively worse environmental conditions consume less of the environmental goods and spend more time in their collection. In contrast to earlier studies, this study finds that the increase in collection time comes almost equally from men and women. Higher collection times for both men and women are also associated with community forest management variables. Another finding of this study is that household collection burdens are significantly lower in 1997 than in 1982. Household women as a group have seen the largest decrease in their time spent collecting.

Encouragingly the time it takes to collect a unit of fuelwood or leaf fodder has decreased between the two years accounting for part of the decrease in total collection time. The picture is not an entirely rosy one, however, as consumption of environmental goods is also significantly lower in 1997 compared to 1982. It appears that lower per unit collection times are due to households collecting more from their own property rather than to higher community resource availability. Over half of the sample households said that they had planted trees on their property in the past 14 years, many of which were specifically planted for fodder, and over 80 percent have allowed trees to grow up naturally. Further analysis shows that there is a substitution of private for common resource use as the common resource becomes more scarce due to

FUG rules or deforestation. Households in areas with a smaller community forest are significantly less likely to collect fodder and fuelwood from the community forest than households with a larger community forest. Similarly, households in areas with a FUG that enforces its rules are much more likely to collect fodder from their own property.

Conclusions

The results taken together indicate that collection labor burdens in the survey areas have decreased over time, especially for women, but that one should not hastily attribute decreases in collection time to successful forest rehabilitation in areas managed by forest user groups. In this case it appears that lower collection times are principally due to reduced consumption and increased collection from private land. This study provides empirical evidence that using one's own land to produce fuelwood and fodder is an important coping response to scarcity of community forest resources for hill households. Of course, growing trees on one's property is usually not a costless option, given the competition for space for crops, and it is obviously not an option at all for households who do not own any land. This highlights the point that the poorest households in a community are likely to bear the highest costs of environmental degradation, at least in terms of the labor burden required for collection.

Keywords: Nepal, deforestation, labor allocation, gender

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