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NaturalR esource Management and Poverty Alleviation in Mountain Areas: Approaches and Efforts

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Natural Resource Management and Poverty Alleviation in Mountain Areas:

Approaches and Efforts

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Introduction

This paper addresses community-level natural resource management and rural poverty, first by re-examining the mainstream view that blames the poor for natural resource degradation. This is followed by a comparison of the traditional and present-day systems of natural resource management in mountain areas. This helps in the identification of factors and processes contributing to resource degradation. Lessons from past systems and successful experiences of new initiatives on community forest management in Nepal and India are synthesized to suggest possible approaches to rebuilding communities' natural assets. The final section of the paper looks at concerns and uncertainties relating to new forest-centered initiatives, and at possible ways to address these.

The crucial role of natural asset building in reducing poverty – by conserving, regenerating, upgrading, and equitably harnessing natural resources, particularly forests, pastures, and their links with crop lands – stems from the contributions of these resources towards enhancing the livelihood options of the poor (Dasgupta 1996). These include direct availability of seasonally and spatially varying supplies of bio-fuel, fodder, fiber, food items, timber, and high-value products such as medicinal herbs, honey, mushrooms, and vegetable dyes. The indirect services provided by forests and other natural ecosystems include stability of the micro-environment and the flow of moisture and nutrients to sustain productive farming systems.

This facilitative role of forests is all the more important in mountains regions, where due to limited accessibility and relative isolation, people's dependence on local resources is very high. The forest imparts important protection against hazards and risks associated with slope-induced fragility of landscape, occupies a central place in sustaining diversified land-based activities, and, along with pastures, organically links different biomass-based economic and ecological functions. Ideally, functions and contributions are integrated with positive ecosystem/social-system links, where in community norms and practices are adapted to attributes of natural resources. However, their nature and magnitude tend to change following increased external state and market interventions in mountain areas.

Poverty and Resource Degradation Link

The physical, economic, and ecological benefits of natural resources are not confined to the poor, but the poor do tend to depend more on nature-offered options. Unlike better-off groups, they do not have enough human-made endowments to support them (Agarwal and Narain 1990; Jodha 1992). And yet, this not only continues to be disregarded by development strategies, but its logic often is reversed in the scholarly discourse that attributes natural resource degradation in the developing countries primarily to poverty. I call this the poverty-environmental resource degradation (P-ERD) link.

Before discussing the central issue of poverty alleviation through building natural assets, I question the P-ERD link, and advance an alternative explanation for natural resource degradation. The essence of this argument is as follows: evidence on the correlation between P and ERD cannot be generalized because it does not exist everywhere and at all times; there is an

alternative causal interpretation for the correlation, where it does exist, in which environmental resource degradation (ERD) causes poverty rather than the reverse; and the real cause of ERD is inequality rather than poverty. In the following discussion I elaborate on these aspects.

The P-ERD link is premised on the widespread coexistence of poverty and environmental resource degradation in developing countries. However, the reasoning is focused on the consequence rather than the process behind this phenomenon. Natural resource degradation, initiated and accelerated through different processes, has led to situations in which the poor emerge as the principal users of degraded natural resources, because of a lack of other options and a very low opportunity cost of labor in comparison to the rich. However, in the mainstream discourse on the subject, the P-ERD link is emphasized so frequently and effectively (for example, Durning 1989; Mink 1993), that is has acquired the status of a stereotype. This not only diverts attention from several basic issues involved in the process of resource degradation (Panayotou 1990; Metz 1991), but also prevents the recognition and analysis of simple field-level observations.

There is widespread evidence, for instance, that in many areas currently facing severe environmental resource degradation, resource users in the past were poorer than they are today, and yet the natural resource degradation was consciously prevented (Bromley and Chapagain 1984; Sanwal 1989; Pant 1935). Furthermore, in many areas the contribution of richer groups towards resource degradation is currently greater than that of the poor (Jodha 1992; Prakash 1997). A mapping of all districts of Nepal, using 39 indicators of development, reveals that the economically poorer districts ranked much higher in terms of the extent and health of environmental resources, including forests, pastures, soil, and perennial water springs (ICIMOD 1997). The neighboring country of Bhutan is poorer, even by South Asian standards, but has the highest extent of undisturbed natural forests and undepleted soil and water resources (National Environment Commission 1998).

The explanation for the co-existence of poverty and a better status of natural resources lies in the processes influencing patterns of resource use. First, the poor have limited needs and limited resource extractive capacities with which to erode the natural resources. More importantly, they are spared from external interventions and forces that often accompany the rising affluence of communities. Consequently, poor communities have an undiminished stake in the health and productivity of their environmental resources, and they have institutional norms and practices at their command to safeguard this stake. Dilution or disintegration of this community stake, and the erosion of grassroots-level mechanisms to protect and enhance it, constitute the fundamental reason behind natural resource degradation, irrespective of the poverty or richness of communities (Bromley and Chapagain 1984). This critical factor is largely ignored by the generalized mainstream view that attributes resource degradation to poverty. Consequently, the focus tends to be on proximate symptoms (e.g., poverty) rather than the key driving forces causing degradation of natural resources (Prakash 1997). More than poverty, it is inequality in resource ownership, access, power, and other endowments that promotes environmental degradation (Boyce 1994).

The line of reasoning behind the P-ERD view is that poverty and scarcity cause desperation, which in turn promotes over-extraction of resources leading to resource degradation, causing still

greater poverty and scarcity, which again further accentuate this cycle. A major limitation of this formulation is its assumptions about the poor's approach to natural resources and their resource use behavior. There are four implicit premises underlying the depiction of poverty as the prime mover of environmental degradation. First, the over-extraction of resources is the only and preferred means of sustenance that poor people know. Second, the poor are ignorant of the limitations of their natural resources and of the consequences of their extractive usage practices. Third, the poor have little stake in the health and productivity of their natural resources. Finally, the poor have high rates of time preference, so that even if they are not ignorant of the limitations of resources, and have concern for the health of the resources, they cannot afford to limit extraction (Jodha 2001).

All these premises can be easily inferred from the current pattern of natural resource use in many poor areas. However, my contention is that these are only manifestations of the erosion of past arrangements at the grassroots-level, where the poor's situation and behavior were previously quite opposite to the ones implied by the above premises. This can be illustrated with the help of examples from the Himalayan mountain regions of Nepal, India, China, and Pakistan.

The Mountain Context

Mountain areas are of special significance in the P-ERD link. Most parts of the Hindu Kush-Himalayan region, extending from Afghanistan to Myanmar and covering eight countries, not only belong to the category of poor areas, but also are faced with the rapid degradation of natural resources. Furthermore, the past situation of these mountain areas in terms of ecosystem/social-system links, where resource users' behavior was conditioned by bio-physical features or supply-side limitations, contrasts sharply with the present situation, where resource use is demand-driven and ignores limitations of the natural resource base (Jodha 1998). Finally, as elaborated below, these areas have a very high potential for persistence of both poverty and rapid degradation of natural resources.

The biophysical features of mountain areas – their high degree of fragility, marginality, limited accessibility, and narrow location specificities of activities – tend to favor the persistence of poverty (Jodha 2000a). Due to these features, the conditions historically associated with enhanced economic performance or reduction of poverty in most parts of the world (e.g., resource use intensification, surplus generation, reinvestment, and equitable trade) are rarely satisfied in the mountain areas. For instance, resource use intensification and high input absorption for enhanced productivity are constrained by fragility and marginality; gains associated with a larger scale of activities are not possible due to the high degree of resource diversity that favors a narrow location specificity of activities. These factors restrict the scope for surplus generation and reinvestment. The gains from trade and external exchange are also restricted by limited accessibility and isolation, and conditions also restrict the harnessing of opportunities for internal trade linked with small-scale, diversified production systems. Faced with these objective circumstances, the mountain communities, except for those in well-endowed and accessible valleys, live with limited, low productivity options and high environmental risks. Except for extracting niche resources, such as minerals, timber, and hydro-power, the mainstream economic and political systems generally found mountainous areas unattractive and

ignored them. Thus nature and the mainstream economy together generated high poverty in these areas.

Thus poverty of the people and fragility of natural resources in the mountains make them potentially an ideal place for the operation of the P-ERD link. The failure of this potential to materialize in the past, however, encourages one to question the overemphasis of the P-ERD link. An understanding of the reasons behind the non-working of the P-ERD link in the past can provide useful insights to evolve options for breaking the vicious cycle of poverty-resource degradation-poverty implied by the P-ERD theme today. To facilitate this understanding, I next take a quick look at traditional systems of resource use, based on collective stakes and mechanisms to protect and enhance these stakes.

The Past and the Present Approaches to Natural Resource Management

Here I describe some features of traditional natural resource management systems in mountain areas that have direct relevance to the poor's resource use behavior. It should be added that the purpose of highlighting traditional practices in mountain areas is not to idealize them. The objectives are to indicate the grassroots-level institutional arrangements that helped in balancing the protection and extraction of resources to meet sustenance needs, to reflect on the processes and factors leading to the erosion and decline of these arrangements, and to identify possible lessons from the current initiatives directed at re-building natural assets.

Table 1 summarizes the inferences from various studies of natural resource usage in mountainous areas. Faced with low productivity options, high environmental risks, and limited and undependable external linkages, most of the communities in these areas had to evolve their sustenance strategies through adaptations to the limitations and potentialities of their local natural resource base (NRB). Adaptations included seasonally and spatially diversified and interlinked land-based activities such as diversified farming systems, farming-forestry links, and common property resources. Despite internal inequities and occupation-specific differences in gains from the NRB, everyone's close dependence on local resources created an integrated collective stake in their natural resources, reflected by group action to protect and manage them (Berkes 1989; Jodha 1998; Leach *et al.* 1997).

In the context of the relative isolation and small size of rural communities, physical proximity to environmental resources imparted knowledge and understanding of the limitations and usability of their NRB. This not only helped in developing folk technological practices to protect and regenerate the resources while using them, but also facilitated the creation of a locally enforceable range of regulatory measures to guide use-intensity, such as rotational grazing, periodic fallowing of lands, combining annual and perennial-based activities, and periodic contributions of labor, grain, etc. towards investment for trenching, fencing, and other practices for upkeep and development of the resources (Pant 1935; Jodha 1998; Tamang *et al.* 1996; Bijoness 1983).

Table 1: Factors and Processes Associated with Community Approaches and Usage of Natural Resources in Mountain Areas under the Traditional and the Present Systems

Traditional Systems	Present Day Systems
A. *Basic objective circumstances*: (i) Poor accessibility, isolation, semi-closeness: low extent and undependable external linkages and support: subsistence-oriented small populations; (ii) Almost total or critical dependence on local, fragile, diverse natural resource base (NRB) Consequence: High collective concern for health and productivity of NRB as a source of sustenance	(i) Enhanced physical, administrative and market integration of traditionally isolated, mountain areas/communities with the dominant mainstream systems at the latter's terms; increased population; (ii) Reduced critical dependence on local NRB; diversification of sources of sustenance (iii) High external demand, natural resource extraction Consequence: Reduced collective concern for local NRB; rise of individual extractive strategies; ERD
B. *Key driving forces/factors generated by (A)*: (i) Sustenance strategies totally focused on local resources; (ii) Sustenance-driven collective stake in protection and regeneration of NRB; (iii) Close proximity and access-based functional knowledge/understanding of limitations and usability of NRB; (iv) Local control of local resources/decisions; little gap between decision-makers and resource users. Consequence: Collective stake in NRB supported by local control and functional knowledge of NRB	(i) External linkage-based diversification of sources of sustenance (welfare, relief, trade, production etc.); (ii) Disintegration of collective stake in NRB; (iii) Marginalization of traditional knowledge, and imposition of generalized solutions from above; (iv) The state imposed legal, administrative, fiscal measures displacing local controls/decisions; wider gap between decision-makers and local resource users Consequence: Loss of collective stake and local control over NRB; resource users respond in a 'reactive' mode
C. *Social responses to (B)*: (i) Evolution, adoption of resource use systems and folk technologies promoting diversification, resource protection, regeneration, recycling, etc; covering forest, pasture, cropland and their organic links (ii) Resource use/demand rationing measures; (iii) Formal/informal institutional mechanisms/ group action to enforce the above. Consequence: Effective social adaptation to NRB	(i) Extension of externally evolved, generalized technological/institutional interventions; disregarding local concerns/experiences and traditional arrangements; promoting sectoral fragmentation (ii) Emphasis on supply-side issues ignoring management of demand pressure (iii) Formal, rarely enforced measures. Consequence: Natural resources over-extracted as open access resources
D. *End results*: (i) Nature-friendly management systems; (ii) Evolved and enforced by local communities; (iii) Facilitated by close functional knowledge and community control over local resources and local affairs. Consequence: 'Resource-protective/regenerative' sociasystem-ecosystem links	(i) Over-extractive resource use systems, driven by uncontrolled external market demands and internal population-driven demands; (ii) Externally conceived, ineffective and un-enforceable interventions for protection of NRB; (iii) Little investment and technology input in NRB Consequence: Rapid degradation of fragile NRB; nature pleads not guilty; so does the rural poor

Source: Table adapted from: Jodha (1995, 1998).

Most importantly, enforcement of the above measures was facilitated by social actions, community norms, group action, and in some cases feudal arrangements for punishing the defaulters. The ultimate source of strength for enforcement of these arrangements was local autonomy over local resources and local affairs, and the resource users' collective experiences and knowledge of their resource base. Despite the presence of some unegalitarian elements, these collective arrangements worked, because the commonness of the source of supplies helped in integrating the individual stakes into a collective stake in the local natural resources (Jodha 1998; Sanwal 1989; Leach *et al.* 1997; Tamang *et al.* 1996).

The regulatory measures and collective efforts also extended to demand-side aspects of resource use, as indicated by collective sharing arrangements for food and fodder during scarcity and crisis periods, management of demand pressure through periodic migration of people and animals, and restrictions on the size and composition of animal holdings (Jodha 1995; Bijoness 1983; Prakash 1997). In some mountain communities, the demand pressure was controlled through restricting population growth by requiring eldest sons to become Buddhist monks – a practice that still prevails, to an extent, in countries like Bhutan.

To sum up, the foundations of traditional systems of natural resource management in mountain areas included: communities' collective stake in the health and productivity of local natural resources; physical proximity and practical experience-based knowledge, as a basis for evolving technical and institutional measures to prevent over-extractive resource usage; local control over local resources; and adherence to social sanctions that empowered the community to enforce measures that helped in balancing supply and demand aspects of resource use.

These arrangements helped significantly in preventing the operation of the P-ERD link in the past. However, as Table 1 also shows, these arrangements got eroded following changes that (except for population growth) were initiated from the outside following the closer physical, administrative, and economic integration of mountain areas into the mainstream economy and society. The most critical and common element of these changes has been the conception, design, and implementation of external interventions by state agencies without sufficient understanding of the ground realities, including local communities' concerns, capabilities, and knowledge systems. These externally designed interventions, directed to the development or transformation of mountain areas without a mountain perspective, created circumstances and perverse incentives (such as individual-centered subsidies for resource use intensification and for the acceptance of external advice and technologies) that finally led to disintegration of communities' stake in natural resources, disempowerment of communities in the management of grassroots-level problems, and marginalization of local knowledge systems and institutional arrangements that helped in enforcing NRB protection in the past (Somanathan 1991; Tamang *et al* 1996; Guha 1983; Butt and Price 1999; Bromley and Chapagain 1984). Table 1 indicates some of the provisions that eroded traditional arrangements without providing effective substitutes. Examples include legal and administrative impositions on resource access and usage, extension of resource-intensive technologies unsuited to mountain areas, and focus on supply promotion ignoring demand control.

The enhanced physical, administrative, and market integration of traditionally less accessible, marginal areas into the mainstream systems reduced the crucial (if not total) dependence of local

communities on local NRB. Integration brought several gains to these areas, including external linkage-based increase and diversification of sources of sustenance through welfare and relief schemes, new production possibilities, increased gains through trade and exchange, infrastructural facilities, and social-sector services. But it also had some backlash effects in terms of dilution or disintegration of a community's collective stake in the NRB, disregard and erosion of the traditional arrangements that in the past helped to protect and regulate use of the NRB, and an end to the local communities' roles and responsibilities in managing local resources and local affairs. This happened through the introduction of largely outward-looking and politically-oriented formal institutions such as panchayats (village councils), the empowerment of government revenue officials and forest officials as custodians of natural resources, the replacement of locally evolved institutional arrangements and customary provisions by legal and administrative arrangement evolved at a higher level, and the distortion of community incentive systems by patronage, subsidies, and relief. The point here is not to question the integration and its benefits, but to question the process that disregarded and marginalized the traditional arrangements for managing and strengthening the communities' natural assets. The rural poor obviously can not be held responsible for this change.

To reiterate, integration has surely helped the mountain communities (though not all communities or individuals equally) in several ways, including reduction of the extent of poverty and vulnerability. But in most cases this change did not facilitate ongoing community collective involvement in natural resource management.

Another negative side-effect of integration, is the shift from supply-driven to demand-driven usage of the extraction of resources. The two-way adaptation process – that is, adapting human demands to resource limitations, and adapting or amending resources to rising human needs through terraced water harvesting, annual-perennial combinations, and so on – that characterized traditional systems has become a one-way process. The meeting of uncontrolled demands via enhanced technological capacities and support systems to over-extract resources has become the dominant pattern. As mountain people often say, the 'greed' of the rich rather than the 'need' of the poor has become the driving force behind over-extraction. An associated feature has been the development of unequal highland-lowland economic links, leading to unrealistic pricing and limited compensation for mountain resources, products, and services, such as timber, hydro-power, non-timber forest products (NTFPs), and tourism services, flowing from mountains to lowland economies (Jodha 2000a). The integration did not facilitate an internalization of gains for mountain areas availed by the lowland systems.

Lessons for Rebuilding Natural Assets

In view of the visible failures and ineffectiveness of most government efforts to protect natural resources and prevent their degradation, one may be tempted to look for some leads from traditional arrangements. Before venturing in this direction, however, it should be clearly stated that pleading for the revival of traditional arrangements for natural resource management could be dismissed as an exercise in futility because most of the objective circumstances associated with them in the past have completely changed. Market penetration and changes in the attitudes of village communities have promoted values and norms that put a very low premium on

collective strategies. Population growth, a rise in factionalism, and increased economic differentiation have made it difficult to evolve and maintain a collective community stake in natural resources. Depletion of natural resources and the depletion of the culture of group action (or social capital) tend to reinforce each other, accentuating the community's indifference towards rehabilitation of natural resources for collective gains. Also, the legal, administrative, and fiscal mechanisms (despite lip-service for the opposite) have strong tendencies towards centralization and the application of uniform, top-down solutions that ignore diversity at the grassroots level.

However, without pleading for a revival of traditional arrangements in the form that they once existed, one can focus on a search for functional substitutes for traditional arrangements that can fit with the present day circumstances. In order to do so, one should focus on the three pillars of traditional systems that in the past played crucial roles in preventing human-induced degradation of natural resources in mountain areas. To reiterate, these were: a strong community stake in their local NRB driven by communities' almost total dependence on the same; local control over local resources resulting from isolation and an inaccessibility-induced degree of autonomy; and resource users' and decision-makers' functional knowledge of the limitations and usability of their diverse natural resources, resulting from people's close physical proximity and access to resources.

The incorporation of the three elements – community stake, local control, and functional knowledge of natural resources – into the present resource use systems may help in the rehabilitation and conservation of natural resources, and should be promoted. But revival of historically associated objective circumstances – exclusive and almost total dependence on local resources, semi-closed communities, physical proximity for all stakeholders – is neither possible nor, in some contexts, desirable. Hence, the challenge lies in creating a present-day functional substitute that can promote these key elements and induce communities to protect and develop their natural assets while using them.

In Table 2, I briefly summarize the relevant issues, and indicate the constraints to such change with respect to each of the three elements. This is followed by possible remedial measures. The suggested possibilities are supported by small and scattered evidence based on successful initiatives in community forestry in recent years. Accordingly, the following discussion of possible approaches to rebuilding natural assets combines the usable elements of traditional systems of natural resource management with the experiences of recent initiatives on community forest management.

Reviving A Community Stake in Natural Resources

A community stake in local natural resources is central to their protection, development, and equitable use. However, in the present-day context there are more circumstances discouraging this than supporting it. In most cases, local communities simply adjust to external controls and perverse incentive systems, such as government laws and regulations, rather than controlling or planning their own approach to resources. The whole incentive structure – permitting

Table 2: Approaches and Constraints to Revival of Key Elements of Traditional Resource Use Systems in the Present Context

(A) Community Stake in Local Natural Resources	(B) Local Control Over Local Natural Resources	(C) Recognition and Use of Resource Users Perspectives and Traditional Knowledge System
Constraints (1) Formal legal, administrative fiscal controls/restrictions creating a range of perverse incentives; reactive mode of community behavior as individuals (2) Highly depleted status of NRB creating no hope and incentive to have a stake in it. (3) More diverse and differentiated communities with different, individual rather than group-based views on community resources.	**Constraints** (1) State's inbuilt resistance to self disempowerment through passing decision-making power to local communities; focus on 'proxy arrangements', e.g.,, village Panchayats (2) Faction ridden, rural communities driven by diverse signals and concerns. (3) NGOs as key change-facilitating agents, often governed by own perspectives, concerns	**Constraints** (1) Top-down interventions with a mix of 'arrogance, ignorance and insensitivity' towards local perspectives and traditional knowledge systems. (2) Focus on (old context-specific) forms of traditional practices rather than their rationale for use in the current context. (3) Rapid disappearance and invisibility of indigenous knowledge.
Possible remedial approaches (1) Genuine local autonomy for local resource management (see 'B' for constraints to this); legal framework and support system for natural resource user groups. (2) Resource protection, investment and use of new technologies for regeneration/high productivity of NRB (using experiences of successful initiatives). (3) Collective stake through planned 'diversification' and 'shareholding' system in natural resource development and gains (using experiences of successful initiatives).	**Possible remedial approaches** (1) Genuine decentralization, decision-making powers and resources to communities; raising latter's capacities to respond to the above (with the help of NGOs). (2) Rebuilding 'Social Capital', mobilization and participatory methods using NGO input; focus on diversified, high value products from rehabilitated NRB (using successful experiences). (3) Required changes in NGO approaches/perspectives by introspection; involving small local groups, and unlabelled agencies.	**Possible remedial approaches** (1) Promotion of bottom-up approaches to resource management strategies, using participatory methods and NGO help. (2) Focused efforts to identify present-day functional substitutes of traditional measures for resource management. (3) R and D to incorporate rationale of traditional knowledge system (using experiences of successful initiatives).

Source: Table adapted from Jodha (1998)

privatization of community resources and illegal extraction with little penalty, giving priority to political patronage, and unrealistically low pricing of high-value natural resources products – acts as a disincentive for community involvement in resource protection and regeneration. Reconciling the interests of diverse groups in the villages constitutes yet another challenge for building a community's collective stake in the health and productivity of natural resources. Internal heterogeneity and inequities are not new things to South Asian villages. As noted in Table 1, however, the decline of a culture of group action, increased economic differentiation, and socio-political factionalism have greatly increased the differences and divisions in rural communities.

Furthermore, traditional circumstances, like dependence on a common resource base, that facilitate informal inter-group bargaining and reconciliation (Leach *et al.* 1997) no longer exist. In place of a local NRB as a common source of sustenance, now there prevail multiple and diverse sources of sustenance, of internal and external origin. The long lead-time available for internal bargaining and adaptations is no longer available. At times the socio-political links for different groups fall outside the boundaries of local communities' influence, and the organic links between different natural resource-based activities – farming-forestry-livestock complementarities – are broken due to outsourcing of their input needs and product disposal destination (Jodha 2002). All these factors obstruct the evolution or revival of a community's collective stake in natural resources. Moreover, in the context of the present bio-physical and economic status of a community's natural resources, local control over local resources may not induce a positive response from the community. The natural resources in many areas are depleted to a level that does not inspire much hope, let alone community groups' interest in their management. The emerging tendency on the part of people (both rich and poor) is somehow to grab the common property resources as private property, rather than to collaborate in collective efforts to rehabilitate the depleted common resources.

Remedial measures

Most of the aforementioned constraints to reviving a community's stake in local natural resources are of an institutional nature, requiring different approaches and lead-time periods to resolve them. However, in view of the evidence that people care more about more productive units than unproductive units of the same type of community resource, as reported by Jodha (1992), and considering the people's rising priorities to economic gains (Jodha 2002), one can identify the depleted state of community resources as an entry point for reviving a collective stake. Remedial efforts have to focus on converting depleted natural resources into productive natural assets. Regeneration and development of community resources, equitable access to resources and their gains (including for the poor), and reward or compensation for downstream services of natural assets built and maintained by local communities, have to be the integral components of these remedial strategies.

The structure of my reasoning is as follows: Eliminate the conditions that induce people's indifference towards community natural resources; raise resource-productivity to achieve this; promote investment and associated activities to enhance resource productivity; to facilitate this, mobilize communities and their effective participation in resource management; to promote participation ensure both local control over local resources and equitable access for all groups in the community; and enhance local capacities not only to achieve local control, but also to bargain for ensuring an internalization of downstream gains from stable and productive natural resources.

The linchpins of the whole process are community mobilization and participation, including incentive structures to facilitate these, and enhancing local capacities for new tasks, including empowerment to seek macro-level attention and support. The two aspects are interlinked in several ways.

In the context of highly differentiated rural communities, the effective group action implied by the above propositions may be dismissed as wishful thinking. However, the on-the-ground experience of some successful initiatives offers a different perspective and inspires greater hope for change. Agha Khan Rural Support Programme (AKRSP) in mountains and other areas of Pakistan has effectively promoted social mobilization for natural resource development and economic well-being of communities. State-supported community efforts in several parts of India, especially in the states of West Bengal, Gujarat, Madhya Pradesh, and Andhra Pradesh, have contributed to the rapid regeneration of forest and other natural resources as revealed by both satellite imageries and field observations (Poffenberger 1995; Hazra *et al.* 1996; Saigal 2001). The often-cited case of Sukhomajri Project in India, where community involvement in total watershed restoration, including innovative mechanisms for the equitable use of natural assets (such as sharing gains through water rights to non-land owning households), illustrates the scope for mobilizing diverse groups for collective resource management (Sarin 1996; Agarwal and Narain 2000). Community irrigation systems and user-group forestry programs in Nepal, involving the mobilization of communities for local resource development and management, furnish further evidence the effectiveness of group action in building natural assets (Shivakoti *et al.* 1997; Joshi 1997).

There are many other success stories of social mobilization not only for natural resource management but also for poverty eradication. A Ford Foundation-supported program on asset building in various countries (Ford Foundation 2002) offers examples. United Nations Development Program-supported programs focusing on decentralization and participation-based rural poverty eradication, such as the Participatory District Development Program and the Local Governance Program in Nepal, are another example (PDDP 2001, LGP 2001). International Fund for Agricultural Development (IFAD)-supported projects in uplands and elsewhere have also helped building group action for poverty eradication (IFAD 2002). Social mobilization for natural asset building and other development activities thus is not only being increasingly emphasized but has demonstrated effectiveness in several areas.

Focus on Economic Gains

A common feature of most of the successful social mobilization efforts is the visible economic gains perceived by the communities. The mechanisms to ensure that such opportunities are perceived, even in the short-run, differ from intervention to intervention. They include initial component-specific subsidies (payable before or after accomplishment of the tasks); repayable activity-specific loans (often with collective undertaking for repayment); encouragement for local resource mobilization, sometimes through micro-credit schemes; and support for local demand-driven initiatives rather than top-down, supply-driven activities. In the case of natural assets, the globalization process can also offer much-needed economic incentives for development and efficient management by encouraging the trade in high-value NTFPs like herbs and certified organic products. This can promote diversification and value-adding processes to enhance gains from healthy and productive natural assets, as seen in the case of parts of China, India and Nepal (Jodha 2002). If equitably shared, these changes can further encourage community participation.

One of the most effective means to ensure enhanced economic gains from natural assets is internalization of the benefits from efficient management that accrue to the lowland/external economies almost free of cost. For instance, communities in the Indian Himalayas spend effort on resource conservation that helps prevent downstream floods and silting of dams. The farmers in downstream plains who use the irrigation water and electricity from these dams, pay no water and electricity charges. Furthermore, the royalties received by the hill states for water and power generated through such projects rarely reach the community levels. There is an exception to this pattern in Nepal, where the state shares with the local communities the revenue generated by mountain tourism. Rectification of this situation would call for compensation to the mountain communities for their custodianship of well-managed natural resources. In the natural assets project framework this would be an example of internalization. It would work as an important economic incentive to induce community action to build and manage natural assets.

Considerable conceptual work has been done on assessing the economic value of environmental and other natural resource flows, but compensating mechanisms based on such flows from highlands to lowlands have yet to be attempted in South Asia. Outside the region, however, there do exist some cases where communities and agencies have evolved mechanisms to ensure compensation for environmental services by beneficiary communities to those who facilitate these services. These include: irrigators paying upstream land owners for improvements in stream flow in Colombia; irrigators financing upstream reforestation in Australia; a Watershed Conservation Fund in Quito, Ecuador helping upstream farmers; Perrier Payments for Water Quality in France; Makilink Forest Reserve in the Philippines paying farmers for land retirement; hydroelectric companies paying upstream land owners via FONAFICO in Costa Rica; and New York City paying upstream farmers for protecting its drinking water (Koch-Weser 2002). In South Asia, such efforts to facilitate the internalization of the gains of natural asset building and management are constrained by a lack of awareness, a lack of usable operational mechanisms, and the persistence of state-to-state (politically influenced) negotiations on royalty payments without involving or rewarding the communities for their resource conservation efforts.

Local Control Over Local Natural Resources

An important facilitative factor that could help in rebuilding communities' stake in natural resources and converting them into natural assets is community control over resources. Traditionally, mainstream decision-makers have permitted greater local autonomy to communities in several mountain areas. However, this was more due to default – that is, their inaccessibility-imposed ignorance and indifference towards mountain areas – rather than a conscious decision. With the increased physical and administrative integration of fragile, remote, marginal areas with the mainstream political-economic systems, most of the local natural resources belonging to the communities have been taken over by the state either through formal law or through disregard of customary laws and practices (Hiremath 1997; Poffenberger *et al.* 1996; Guha 1983). In India, it happened through the colonial British government extending its control over forests and establishing forest departments manage commercial extraction as property of the Crown. After independence national governments inherited the system, with some recent changes (Hobley 1996). In Nepal, a major change happened with the nationalization of forests in 1957, and the debate on further changes is still continuing (Baral 2002). Lynch and

Talbott (1995) analyze similar processes in different Asian countries. The consequent lack of local control over local resources prevents community protection and regulation of the use of natural resources. Deprived of forest ownership, communities tend to over-extract resources (Bromley and Chapagain 1984). The importance of changing this situation can hardly be overstated.

Constraints

Genuine and effective devolution or restoration of local control over local natural resources faces several constraints emanating from the state's resistance to self-disempowerment. Despite all the talk of decentralization and 'power to the people', when it comes to the control of a property or productive resource, the state operating through its sectoral bureaucracy always tries to avoid the issue through different devices (Jodha 2000b). For instance, it tries half-hearted compromises, such as under Joint Forest Management in India, where communities are involved in protecting resources and there is limited sharing of specific products like timber, and communities are allowed to use intermediate products such as fodder, fuel, and minor forest products that the state finds difficult to use.

Use of proxy arrangements is another approach adopted by the state. This is illustrated by the creation of formal institutions such as the village panchayats, with all legal powers and provisions determined by the decision-makers at the top. In most cases, such small-scale political bodies have very little concern and involvement in natural resource management, except when relief and subsidies can be mobilized by showing the extent of community resources in the village (Jodha 1992; Saxena 2000). Despite the recent focus on decentralization, panchayats may not be a substitute for 'user groups' since their goals are too diversified and natural resource protection constitutes a small component therein. The difference between village commons managed by village elders or user-group leaders and those managed by a panchayat makes this clear. The former give greater attention to the up-keep of natural resources, while the latter tend to treat them as objects for getting government subsidies. Besides, the latter are largely political bodies (Brara 1987; EERN 2000). Conflict between the elected village councilors and the JFM or forest user group leaders tends to erode the gains of the new participatory initiatives in different parts of India (Jodha 2000b). Faction-ridden and differentiated rural communities, as alluded to earlier, and high dependence on government patronage, complement the constraints originating from the state side.

Remedial measures: Emerging Scenario

Despite strong resistance to devolution on the part of the state, the current scenario offers some options to gradually alter the situation. To begin with, there are greater awareness and efforts at the national and international levels to promote decentralization and community participation to ensure sustainable development. The latest global thrust, promoted by rich donors such as the World Bank and International Monetary Fund through their Poverty Reduction Strategy Programmes, accords high importance to community ownership of development programs facilitated by decentralization and participation. The field initiatives by the Ford Foundation,

United Nations Development Program, and IFAD mentioned above also focus on changes in this direction. Induced by the above global thrusts and in some cases by donor pressure, national governments are slowly proceeding with various decentralization initiatives (e.g., in Nepal and India).

Apart from the above – largely supply-side factors indirectly favoring local control of local resources and local affairs – I may also refer to some demand-side possibilities. Mainly through the efforts of nongovernmental organizations (NGOs) and community organizations, the advocacy and demand for greater control of local resources by local communities is increasing at both national and international levels. This demand is supported by convincing evidence that devolution can help better management and sustainability of natural resources. The state in many cases has positively responded to such demands. This is partly a product of capacity building and empowerment of local communities through institutional interventions supported by NGOs, donors, and enlightened government agencies. (For discussion see Krishna *et al.* 1997, Zazueta 1995, Gilmour and Fisher 1991, and Saxena 2000.)

Local Perspectives and Traditional Knowledge Systems

Even when community involvement in natural resource management is promoted at national or global levels, in practice it must be implemented at local or micro levels. Hence, approaches to natural asset building have to be sensitive to local perceptions. An important dimension relates to traditional knowledge and experiences about the potentialities and limitations of natural resources and possible ways to address them. Examples may include differences according to slopes in mountain areas in soil treatment, crop combinations, crop fallow rotation, and so on. These aspects are often bypassed while initiating interventions for local resource development in Nepal and India (Jodha 1992; Tamang *et al.* 1996). Even global initiatives, such as treaties and conventions on bio-diversity conservation, generally ignore local concerns and indigenous knowledge. Macro-level perceptions are rarely linked to diverse micro-level realities. In the process they lose valuable technical (folk-agronomic) knowledge that could help in enhancing the productivity of natural assets.

Constraints

As reported by Jodha and Partap (1994) and Tamang *et al.* (1996), the important factors obstructing the incorporation of indigenous knowledge in the present-day interventions for natural resource development are the arrogance and insensitivity of the planners towards the local communities as a source of information to solve local problems. This is compounded by the general non-availability of indigenous knowledge in a very articulated form on the one hand, and by the technocrat decision-makers' focus on the form rather than the rationale of traditional practices on the other. Since the forms of traditional practices had been context specific (e.g., extensive farming practices worked well under low population pressure, or total dependence on local resources helped in building a community's stake in a semi-isolation context), they became less feasible or ineffective when the situation changed. Instead of evolving alternative forms or practices to suit the changed situation, the decision-makers have discarded both the form and the

rationale of traditional practices such as combining annual with perennials and husbandry of water springs.

Remedial Measures

The following remedial measures should be encouraged: focus on bottom-up approaches to natural resource management; sensitization of decision-makers to local communities' perceptions through advocacy and participatory approaches; and identification and incorporation of the rationale of traditional practices into new technological and institutional measures planned for natural resources. Some of the ongoing initiatives supported by NGOs, such as water harvesting, bamboo plantation, regeneration of pasture, and rehabilitation of commons are already using these approaches (Tamang *et al.* 1996; Sanwal 1989; Saxena 1995). Globally rising concerns for indigenous knowledge systems and practices may help in this regard. In the context of economic globalization, the rising demand for natural and organic products may further promote the case for use of indigenous knowledge systems. For example, agencies collecting medicinal herbs from different areas in Hindu Kush-Himalayan (HK-H) also collect information on their usage and processing methods (Jodha 2002). Similarly, the increasing attention focused on indigenous resource use systems in the context of sustainable development strategies can help in incorporating local knowledge into interventions for local resource development.

Recent Initiatives: Community Forest Management

Due to factors – such as adverse downstream consequences like floods and silting of dams following natural resource degradation in mountain areas; rising global concern for protecting mountain natural resources as a source of international public goods like environmental services, unique biodiversity, and fresh water; and the state's inability to police these resources, despite increased expenditure on it and the successful experience of a number of small-scale community initiatives to protect and rebuild natural resources – a number of programs to conserve, regenerate, and protect the natural resources, particularly forests, through the involvement of communities have been initiated during the last two decades in different countries some in the HK-H region. The details different countries have been analyzed in several studies (Shackleton *et al.* 2002; Brown *et al.* 2002; Butt and Price 2000).

In the following discussion I focus on the two best-known programs in this area, Joint Forest Management (JFM) in India, and User Group Forestry (UGF) in Nepal. The JFM program, initiated over a decade ago in India, has spread to almost all states in the country and covers more than 14 million hectares or over 18 percent of the total forest land in India. By June 2001, 62,890 JFM groups were involved in managing these forests (these figures relate to the whole country and not mountain areas alone)(Saigal 2001). Through UGF in Nepal over the last 20 years, more than 5,000 user groups have taken control of more than 600,000 hectares of forest for protection and regeneration. With assistance from International Center for Integrated Mountain Development (ICIMOD) they have formed the Federation of Community Forest Users

in Nepal (FECOFUN) to promote the interests of UGF. The similar efforts supported by ICIMOD have led to the formation of the Himalayan Forum for Community Forestry (HIFCOF) to promote dialogue among senior officials of the forestry sector in the HK-H region as a whole (Upadhyaya 1999). I have already referred to some of their experiences in the preceding discussion. Here I briefly comment on their achievements and limitations, including their possible contribution towards helping the poor while rehabilitating and strengthening the forests as natural assets.

Despite differences in history, scale and complexity characterizing the subject in India and Nepal, as well as inter-area variations in the performance of the intervention in the same country, I comment on some common features of these initiatives. Broadly speaking, the new initiatives are considered a success, particularly when seen in terms of the improved status of forestry as measured by forest cover and biomass production. Both field observations and satellite images indicate this in most areas. The positive achievements of these initiatives are also indicated by other changes briefly described below. They have resulted from community involvement in protecting forests by controlling encroachments, regulating forest use, and promoting conservation and development activities. An important positive change observed in several areas has been the increased degree of trust between communities and forest department officials, the lack of which in the past contributed to the degradation of forests. Through regulated collection of intermediate products such as fodder and fuel, and wage employment on forest conservation and development activities, the earnings of community members have also increased in some areas. In addition, through collection and sale of specific forest products, the management committees of forest user groups have succeeded in building investable funds for undertaking development activities for the communities. A major facilitative role in these successes has been played by NGOs, donor agencies, and responsive forest department officials (Upadhyaya 1999; Saigal 2001; Shackleton *et al.* 2002). One distinctive feature of these programs is that they require people's input or sacrifice – in terms of foregoing the opportunities to collect bio-fuel, fodder, and other supplies, or grazing of animals due to complete closure or restricted access to forest areas to promote conservation and regeneration of resources – before the gains of enhanced supplies and income flow to them after resources are regenerated and rehabilitated, unlike most of the rural programs that start with bribing (i.e., subsidizing) the people to induce their participation in the program (Jodha 2000b).

Without minimizing the above achievements, it should be mentioned that these new initiatives have shown rather mixed or limited success in terms of several crucial aspects discussed below. The following assessment, however, is explicitly qualified by stating that the inter-area, inter-country differences do exist.

Resource-centered rather than people-centered focus

From the very beginning, the programs under review were directed to rehabilitate the degraded forests by providing some incentive and authority to the communities to encourage them to participate in the program. Consequently, addressing communities' concerns and perceptions was never an explicit part of the initial design. Furthermore, the performance of the programs is also usually judged in terms of changed status and productivity of the forest, and the factors contributing to the same, such as reduced extents of encroachment, or changed images of and

rationale of traditional practices such as combining annual with perennials and husbandry of water springs.

Remedial Measures

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attitudes towards forest officials, rather than changes in people's life and economy. Viewed this way the programs have helped in rehabilitating and building 'natural assets', but whose assets?(Jodha 2000b, Hiremath 1997, Agarwal 2001)

Goal of poverty alleviation: Neither primacy nor explicit focus

This issue emerges as a logical consequence of the feature stated in the previous section. Notwithstanding the fact that community forestry has enhanced the biomass productivity of forests, created occasional wage employment for the community and contributed to the accumulation of investable resources with forest user group councils, the programs in several areas have also adversely affected the poor, women, and other disadvantaged groups. First, unlike the traditional forms of communal resource management, which typically recognized the use rights of all village residents, the new formal arrangements exclude many, especially women and the poor, both as partners in decision-making and as users of resources (Agarwal 2001; EERN 2000).

Second, despite increased biomass productivity, collection of material is restricted to a few occasions in a year. Besides, they often mechanically use equity norms where per household extent of access is the same irrespective of differences in the economic and occupational needs of the rich and the poor. The poor, especially those who collect and carry head-loads of bio-fuel or fodder for own use or for sale, having few resources of their own, lose the most, and are compelled to encroach on the forest areas of their own or other villages to meet their barest needs. The time required for fuel collection (a key forest product needed by women) from distant places has increased many-fold in some areas (Agarwal 2001). The nomadic pastoralists in high mountains who use small ruminants as pack animals in their trading occupation have suffered the most, due to reduced access to common property resources following the imposition of restricted access as a part of UGF in Nepal. This has forced many to abandon petty trading or reduce their herd size (Upadhyaya 1999).

Third, the organic links between farming, forestry, and livestock activities – a part of the poor's coping strategies against risk and vulnerabilities – have disintegrated following restrictive provisions that do not allow free and unlimited access to forest resources, in the interest of conservation and regeneration.

Finally, the products preferred and used by the poor, such as fodder and fuel, tend to get lower priority in product composition set by the forest user group councils, who favor products such as timber that have long waiting periods. The poor typically have little voice in changing these priorities.

Exceptions

Despite a lack of explicit concern for the poor, in some areas both under JFM and UGF, the poor, when allowed to harvest, have gained from the increased productivity of community forests (Shackleton *et al.* 2002; D'Silva and Nagnath 2002). Nepal's leasehold forestry program is the

best-known initiative that exclusively focuses on households below the poverty line. The program, run by the government of Nepal, is supported by IFAD, the Food and Agriculture Organization, and the government of the Netherlands, and is implemented in ten districts. It focuses on allocating degraded forest lands to poor households on 40-year leases. The program is judged quite successful in terms of rehabilitating the forest (with ownership of the trees resting with the state) and building agro-forestry and fruit tree based new opportunities. However, there are some uncertainties in terms of the continuation of the program once donor support ends, and doubts on the transfer of lease rights to children once parents lease rights expire. There are also a few other obstacles faced by the program.; for example, it is reported that it takes more than two years to get lease certificates for a forest tract (Mahapatra 2002; Kathmandu Post 2002).

Nature of community involvement: Illusion of autonomy and empowerment

By design and intention, community involvement in forestry programs was more an arrangement to seek people's participation in policing forests, which the state was unable to do despite increased expenditure. Facilities for collecting intermediate products like fodder, litter, and some NTFPs, and for sharing the benefits of final products like timber, were included as incentives. Authority to prevent encroachment and regulation of intermediate product collection were also part of the arrangements.

However, beyond the above arrangements, the rest of the authority rested fully with the forest department, including promotion and recognition of forest user groups, disqualification of groups for certain reasons, and the right to approve work plans. Thus communities' involvement in the forestry programs has been similar to that of a dignified collective-tenant. There has not been enough real autonomy or devolution of real authority for management of community natural resources (Shackleton *et al.* 2002; Butt and Price 2000). In effect, communities under these forestry programs are care-takers of the state's natural assets, where any legal or other change affecting the asset is the sole right of the state. This may not be very conducive to building a community's collective stake local natural resources. This assessment is further strengthened by recent talk of 'collaborative forestry' or 'corporatization of forestry', where forests could be given to private firms as collaborators. This fuels the communities' suspicions about the intentions of the state vis-à-vis the forestry sector (Saxena 1995; Hiremath 1997).

State-approved group formation: A proxy for social capital

Under these programs the forest department not only provides the broad guidelines for forest user group formation and plans, but also gives a stamp of recognition before the user group is entitled to have any authority. Even existing traditional community groups who are efficiently managing their forests in tribal areas need to be registered by forest officials for their formal recognition (Jodha 2000).

Such state-sponsored and guided user groups follow the standard top-down norms and procedures about inclusion and exclusion of membership, and have little sensitivity to diversity in the local situation. Except for membership in a user group, the people involved may not have

any other commonalities necessary for building trust and confidence within the group. Such groups may not represent what is described as 'social capital'. However, effective mediation by NGOs has helped in converting such formal groupings into 'social capital' in some areas. Recognition and acceptance of any product or service as an important shared item by the community has also promoted genuine group action for natural resource upkeep in many cases (EERN 2000; Butt and Nath 2000; Saxena 2000).

Missing institutional perspectives and conflict situations

Quite related to the feature mentioned above, is another dimension of community forestry programs. The JFM and UGF should be seen as institutional arrangements that attempt to help communities to mobilize themselves to protect and conserve their NRB despite unclear terms and conditions offered by the state. However, due to the rather mechanical approach of the state, forest user groups are established without sufficient understanding of their institutional context in terms of local history, existing group dynamics, socio-economic differences, power relations, and possible ways and processes to address these issues (Jodha 2000b; Agarwal 1997; Gilmour and Fisher 1991). Accordingly, in some sense forest departments seem to treat a 'grouping of people' as not different from a 'bunching of logs' in forest areas. Unless there is active NGO mediation to manage these differences, the composed groups are often faced with a variety of actual and potential conflicts between traditional community groups and new state-formulated groups, between the formal political leadership of the elected representatives of village councils and the leaders of forest user groups, and between intra-community sub-groups based on class, caste, gender, losers, and gainers (Saigal 2001; Agarwal 2001). Such conflicts often erode the gains of a community's collective effort to manage forest resources. Community forestry programs therefore need some provisions and preparations to address this problem (Saxena 2000).

Persisting ambiguities and uncertainties

The community forestry initiatives are faced with a number of ambiguities and uncertainties that can act as risks in the future (Mahapatra 2002; Saigal 2001; Jodha 2000b; Upadhyaya 1999; Saxena 2000). First, in purely legal terms, in most cases (at least in Indian states) these initiatives and their functioning are the product of administrative orders of the government without any legislative foundation. Unlike written laws, these orders can be withdrawn at any time. The pressure by NGOs, media, and communities for changing the situation is already growing (EERN 2000). Second, the provisions about registration and the functioning of community forestry programs provide forest officials with disproportionately great powers that can be used to limit the initiatives of the communities by several methods including disqualifying the user groups and their work plans.

The third source of uncertainties is government's shifting approach to community forestry. They may relate to sharing the benefits, especially from high-value NTFPs, as in India, or permitting corporatization of community forestry as tried by new law in Nepal for the Terai region and debated in India for last several years. Such prospects of change can shake the people's trust in

government initiatives promoting community forestry (Saxena 1995; Hiremath 1997; Brown *et al.* 2002; Shackleton *et al.* 2002). A fourth source of uncertainty relates to the possible withdrawal of donor support to community forestry. In view of the significant performance gaps between the projects with and without donor support, the potential consequences of possible withdrawal is seen with concern (Brown *et al.* 2002). Building local support from within the communities is a major issue that should be addressed in this context. Such uncertainties may create opportunities for rich global corporations to co-opt community forestry programs with a goal of over-extraction of forests. Fifth, the well-functioning community approaches and collective mechanisms addressed to forests protection and conservation may face serious disruptions once the programs move from the protection to the production stage of resource management. Levels and modes of extraction as well as distributive arrangements may pose different types of problems. Both processing and marketing requirements may need different management skills. The conflict levels may also change. These problems require forward-looking, pro-active strategies to manage community forests in the future (Jodha 2000b; Saxena 2000; Upadhyaya 1999).

Finally, one of the major sources of uncertainties, associated risks, and potential opportunities relates to the process of rapid globalization affecting mountain areas and their economies and communities. Due to an unprecedented primacy accorded to markets and the gradual marginalization of the role of state, the process of change may lead the following effects: corporations acquiring community resources to the exclusion of communities; over-extraction of resources driven by external demands; profitability-driven selectivity focused on premium products like NTFPs and herbs, and discarding diversity as a source of sustainable forestry; major shifts in forest management favoring individualistic approaches in place of collective efforts; and accentuation of unequal highland-lowland economic links (Jodha 2000a).

Globalization may also generate new potential opportunities for helping community forestry by enhanced trading opportunities and new technologies. However identifying them and enhancing capacities to harness them are major challenges. The aforementioned potential changes have already been recorded for different mountain areas in the Himalayan region (Jodha 2002). For instance an exploratory exercise on globalization and fragile mountains by ICIMOD in the five HK-H countries revealed that several NTFPs such as medicinal herbs, mushrooms, wild flowers, and vegetable dyes have become important high-value export products. In some cases a number of these products are being promoted through multi-national firms from western countries, and the gains to local communities in the process are disproportionately low. Finally, the whole subject of the relationship between globalization and community natural assets is new and has never been addressed by the promoters of community forestry. Another never-addressed issue involving community forestry in mountain areas relates to the irony of some provisions of the Kyoto agreement. Reforestation activities are compensated by a global fund, but activities directed towards protection and promotion of existing forests do not qualify for this support. Poor mountain communities and forest custodians, therefore, are not eligible for support unless they deforest the mountains first.

To understand and address the above uncertainties, a forward-looking, proactive approach is required. This can be built upon using the experiences of initiatives tried in different areas, particularly comparisons of successful and unsuccessful initiatives. To be fair to the policy

makers, it should be noted that in the case of community forestry initiatives they have been more responsive to the emerging issues in this field compared to many other programs in rural areas (Jodha 2000b). In the Indian case, this is indicated by new guidelines for the JFM program issued in February 2000 that try to address several constraints and uncertainties discussed earlier (Saxena 2000). In Nepal's case, issues affecting UGF and Lease Hold Forestry Programmes also have been debated by the law-makers and the media in response to issues raised by FECOFUN and others (Mahapatra 2002; Upadhyaya 1999). In their respective ways, the growth of civil society, sensitive bureaucracy, community consciousness as well as mobilization, and the global environmental discourse all in their respective ways support genuinely decentralized and participatory management of community natural assets.

Conclusion

This discussion focused on factors helping or hindering community-level natural resource management in the Himalayan region. The paper first questioned the mainstream view that the poor are responsible for resource degradation by looking into traditional arrangements directed to collectively protect and regenerate communities' resources in mountain areas. The decline of traditional institutional arrangements and the breakdown of the community's collective stake in natural resources often has led to degradation of these resources. This happened as a negative side-effect of increased physical, administrative, and economic integration of mountain economies into mainstream plain economies. For this change, the poor plead not guilty.

An examination of the factors and processes leading to the breakdown of a community's collective stake in their natural assets indicates some possibilities for reviving and rehabilitating community assets. In this connection one should focus on three pillars of traditional systems namely a community's collective stake in natural resources, local control of local resources, and learning from indigenous knowledge systems and practices. This paper identified present-day constraints to their revival, and possible remedial measures to address there constraints. The emerging evidence highlights the importance of the economic gains as perceived by communities from different collective initiatives aimed at promoting natural asset building. The paper elaborated on economic gains of natural assets building through internalization of gains flowing downstream and other mechanisms.

The major operational aspect in the above context focuses on social mobilization. Evidence from different ongoing programs supported by NGOs, donors, and government agencies inspires hope in participatory approaches to natural asset building. The above discussion is supplemented by comments on recent initiatives such as Joint Forest Management in India and User Group Forestry in Nepal. The paper highlights their performance, prospects, and constraints. Base on the above, one can draw the following inferences.

Blaming poverty as a prime-mover of community natural resource degradation amounts to discarding the real factors and processes promoting communities' indifference toward their natural resources. Strategies for promoting communities' natural assets should focus on understanding how traditional arrangements got eroded, and identifying the elements that could be re-used in today's changed context. A focus on visible economic gains and social mobilization

should constitute the key areas for interventions to promote community involvement in natural asset building. To promote these key areas one can benefit from the experiences of ongoing interventions in this field.

The JFM in India and the UGF in Nepal offer useful lessons. To strengthen them one can venture to make the following policy recommendations for state governments: give more autonomy and authority to communities in dealing with protection and usage of forest resources; provide the means and mechanisms for promoting equity within the program, with a special focus on improving the condition of the poor and women; ensure an effective facilitative role for NGOs and other agencies in mobilizing forest users to form groups where internal differences and conflicts are mutually settled; ensure increased attention to and understanding of the historical, cultural, and economic diversities of forestry user groups; have clearcut policies and programs to reduce or eliminate the uncertainties emanating from legal gaps, gaps between the authority of the community and the powers of the state, and from changing stages of the program, such as the shift from the protection phase to the usage phase of resource management; and, finally, have forward-looking approaches and strategies to minimize risks and harness new opportunities associated with globalization.

In concrete terms, this last recommendation will require a shift of the orientation of community forestry away from subsistence and towards commercial enterprise, or to an appropriate mixture of the two. Silvicultural research must be guided by this shift. An equitable partnership between corporate agencies and communities focused on fair trade will also be essential, as will enhanced community capacities for such a partnership. The replacement of an ad hoc or reactive approach by a forward-looking, proactive approach to building communities' natural assets, and concrete action towards compensating mountain communities for the environmental services provided to downstream economies by their natural resources management, will also be very important aspects of any forward-looking policy.

Consideration and implementation of the above suggestions may not only help in reducing poverty, but would redirect attention away from the ostensible poverty-to-environmental-degradation (P-ERD) link that currently dominates so much of the mainstream discourse on natural resource management.

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