

## LAND USER BEHAVIOUR AND UNPLANNED PARTICIPATION

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Almost all ecosystem analyses of the behaviour of local land users in the Hindu Kush-Himalaya depict them as engaging in behaviour which is accelerating the deterioration of the mountain environments (Eckholm 1979; Rieger 1981). These analyses point to the farmer, herder, fuel collector, and other local people as the sources of increased soil erosion which watershed management projects are seeking to stem.

The following perspectives are representative of the range of opinions held by watershed management personnel and environmentalists on why local land users are inefficient conservationists :

- Local people are ignorant of the destruction they are causing to their environment.
- Local people are conservative and slow to adapt to changing circumstances (their old adaptations no longer being self-sustaining).
- Though they may know what they should do, local people only operate to maximise their immediate returns regardless of long-term costs (because they are desperate or greedy).
- Local people would act to conserve their environment if they were not constrained by structural factors (such as lack of tenure, lack of control over common lands, lack of markets, and lack of alternatives).
- Local people are in fact adapting to sustainable practices where conditions are favourable, though not necessarily at the speed desired by watershed managers.



Plate 4. Indigenous land user behaviour may still be in consonance with the goals of watershed management



Plate 5. Increasing scarcity of winter feed has resulted in the conservation of scree to alfalfa fields for stall feeding, an adaptive behaviour considered highly desirable by watershed management

Because of the tremendous ecological and cultural diversity of the Hindu Kush-Himalaya, such generalisations are simplistic at best. More significantly, these answers represent the diversity of views of watershed project designers and managers. Underlying this diversity, however, is the shared presumption that upland resource users' behaviour is environmentally destructive and unsustainable.

Without engaging in the debate on the degree of "rationality" in local land users' behaviour -- for which first one would have to identify whose rationality, and from which macro-perspective (Banskota 1985) -- it is useful to take a look at their behaviour over time.

The starting point for such an analysis is the fact that the people of the Hindu Kush Himalaya have been extraordinarily adaptive: a premise supported by their demonstrated capacity to inhabit the Region and increase their population. That many of them have changed their land use behaviour does not imply either that the conditions they are now facing are not significantly different or that particular land use behaviour may not have relatively long-term effects on the environment. However, it does assert the principle that **continuing adaptation to the environment within the context of maximising gain for least cost and risk**, is the principal means for individuals and groups to survive in the harsh conditions found in the Region.

Considerable evidence suggests that these adaptive behaviours are continuing and coincide with many of the changes sought by watershed management. Because adaptations can take place after a lag time in which the costs associated with maladaptations of old practices are high, positive trends are often more difficult to detect than negative ones. Old behaviours blind us to the changes people are already making.

On individually operated resources, the evidence for adaptive behaviours of the type watershed management experts would usually identify as positive is largely undocumented (Schroeder 1985; Campbell and Bhattarai 1983). Based on this limited evidence and our own field observations in China, India, Nepal and Pakistan, we hypothesise that the following trends in local people's land use behaviour are observable and becoming significant among land users in the Hindu Kush-Himalaya. While there is considerable uncertainty with regard to the actual effects of these trends, current opinion among watershed managers would understand them as "positive" (but see Hamilton 1985).

- Cropping intensity (multiple cropping) is increasing (China; Nepal; Pakistan).
- The amount and percentage of land devoted to horticultural crops is increasing (India; Nepal; Pakistan).
- The amount of irrigated land with bench terracing and water management channels is increasing (China; Pakistan).
- Perhaps with the exception of the eastern Himalaya in Bhutan and India, for which we do not have time series data, rotational slash and burn agriculture has declined and is continuing to decline (India; Nepal; Pakistan).
- The amount of sloping agricultural land being converted to terraces is increasing, while old terraces are being allowed to revegetate (India; Nepal).
- The percentage of livestock being stall-fed, and the number of stall-feeding months per animal are increasing (Nepal; Pakistan).
- The per capita population of livestock is decreasing (Nepal; Pakistan).
- The composition of livestock population is being changed to decrease the percentage of traditional cattle in favour of more buffalo and improved cattle breeds (India; Nepal; Pakistan).
- The numbers of trees per hectare cultivated on farm lands is increasing. The number and percentage of farmers planting trees is increasing (China; Nepal; Pakistan).
- The per capita consumption of fuelwood is decreasing (Nepal).
- The percentage of fuelwood obtained from private land is increasing (Nepal; Pakistan).
- House construction methods are being changed to utilise fewer timber resources (Nepal; Pakistan).
- The rate of seasonal and permanent migration is increasing (Nepal; Pakistan).

- The availability and amount of off-farm employment in the upland areas is increasing (China; India; Pakistan).
- Awareness of environmental degradation problems is widespread and increasing (China; India; Nepal).

On group and state resources, the widely identified negative trends, such as deforestation, overgrazing, and erosion, show less evidence of being countered by positive adaptations than on private lands. While even positive adaptations on private lands may be too slow to meet the expectations of watershed managers, the most severe degradation problems are found on public lands.

However, the Hindu Kush-Himalaya also provides evidence of positive trends on public lands. These are encouraging signs of local land users' motivations for reversing the tragedy of the over-used commons:

- One-third of the villages in hill Nepal have at least one local forest under local management and the number is increasing both spontaneously and with encouragement of the government.
- Traditional forms of cooperative grass cutting in Himachal Pradesh, India, are being maintained on public lands.
- Villagers (primarily women in some instances) have acted in concert under the banner of the *Chipko* movement in the Indian U.P. Himalaya to ban outside harvesting of their resources in favour of local control (Jain 1984).

In addition, some environmental degradation has led to behavioural changes now having a positive impact on public lands. For example, in Eastern Nepal the invasion of the *Eupatorium* weed has discouraged grazing on public lands and led to increased interest in alternative land uses such as forestry, tea and cardamom agroforestry.

These positive changes in land use behaviour, taking place outside the context of planned watershed projects, are the most important form of "participation" in conservation-oriented land use. This "unplanned" participation can form the most efficient starting point for watershed management. By focusing on what farmers and herders are presently doing to

adapt positively to changing circumstances, the cheapest and possibly most effective mode of people's participation can be found. This mode of analysis of watershed management projects can assist in identifying successful strategies. The farmer who is motivated to sustain his/her own upland resources is the best participant a watershed management project can have.

Understanding the motivations which underlie land user decisions to adopt more conservation-oriented behaviour thus becomes a major task in any effort to promote participation. There is little doubt that the types of adaptive behaviours noted above -- whatever their extent -- are largely responses to changing resource and economic conditions. In part, they reflect the changing opportunities and availability of new technologies and infrastructure associated with development. For example, many can be seen as adaptations to the increasing scarcity of public land resources such as grazing land, forests and bush areas for rotational agriculture (Campbell 1978). Other changes are more directly associated with government efforts to stimulate economic change, such as the provision of low cost loans for milk buffaloes or the construction of roads and opening of markets. Exogeneous factors such as the availability of off-farm employment in plains areas are also clearly of great importance.

Furthermore, implicit in the earlier categorisation of behaviour on private and group resources is the presumption that resource security or ownership is a key factor in influencing land user behaviour. The way and degree to which natural resources (land, water, trees, grass etc.) are owned by the local people appear to be primary determinants of the use of that resource. Resource ownership (which may include group ownership, traditional usage rights, long-term leaseholds etc.) affects the value and security of the resource: the basis for any decision making in which long-term sustainability is sought.

Following a review in Chapter 3 of how watershed management and related resource projects in the Hindu Kush-Himalaya are directly supporting people's participation, the resource ownership factors are developed into specific hypotheses in Chapter 4.