The missing perspective

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THE Himalaya are one of the major ecological zones of India, where vast areas have not only been by-passed by the recent development processes but have also suffered significant negative side-effects of development interventions. The dominant scenario characterising the Himalaya, like most other mountain regions in developing countries, reveals the widening gap between development efforts (indicated by investment and public interventions) and corresponding achievements in terms of measurable economic gains as well as qualitative changes such as the health and production potential of the natural resource base and environmental consequences.

Even in a short period, over the last 40 to 50 years, several alarming trends have emerged. There are, in this region, clearly visible, persistent negative changes relating to crop yields, availability of mountain products, the economic well-being of the mountain people, and the overall condition of environmental and natural resources. For instance, compared to the situation 50 years ago, the extent and severity of landslides today is higher, water flows in traditional community irrigation systems are lower and the yield of major crops in the mountains (except in highly patronised pockets) are lower.

Also, the diversity of mountain agriculture is reduced, regenerative processes based on organic linkages between different land-based activities are weaker, the interseasonal hunger gap (food deficit period) is longer, the time spent by villagers for the collection of fodder and fuel from neighbouring uncultivated areas or common property lands is longer, the botanical composition of species in forests and pastures has undergone negative changes, and finally, poverty, unemployment and out-migration of people are higher in the hills (Ives and Messerli 1989, Sanwal 1989, Blaikie 1985, ERL 1988).

As a part of the studies on sustainable mountain agriculture at ICIMOD, field-level information on some of these changes has been collected from selected mountain areas of Nepal, India, Pakistan and, China. These persistent negative changes are considered to be indicators of the unsustainability of the present pattern of resource use in the mountain (Jodha 1990b). The

almost parallel emergence of unsustainability indicators along with the acceleration in development efforts in mountain areas is a matter of serious concern and it calls for a fresh look at the conventional approaches to mountain development.

A rethinking of development strategies for mountain areas could start with the development of an operational framework, which can facilitate a proper assessment of the constraints and potentialities of mountain areas, as well as the conception and designing of policy and programme options suited to the specific situation of these areas. In conceiving a conceptual or operational framework for the development of mountain areas, the key factors to be considered are those that separate 'mountain' from other areas, for example, slope and altitude. Compared to the two-dimensional spatiality of the plains, mountain habitats are characterised by three-dimensional spatiality. This additional dimension obstructs the applicability of development or other experiences of plains to the mountains.

Because of slope and altitude, and associated conditions or characteristics (which we shall call mountain specificities), mountains, examined from the perspective of the plains, are often considered to be relatively difficult and marginal environments to live in and in which to replicate development experiences accumulated in the plains. But despite this approach, the fact remains that mountains have historically been the habitats of flourishing civilisations, with the clear-cut markings of mountain conditions on the complexes of production, consumption and trading activities. Furthermore, societies and economies in mountain areas have never been static. A gradual transformation, involving a two-way process of adapting sustenance strategies to mountain characteristics and vice versa, has been an integral part of the 'living mountains' (von Furer-Haimendorf 1981).

Moreover, irrespective of their degree of relevance and impacts, formal development efforts have been extended to mountain areas in recent decades. Admittedly, present-day development interventions are a recent phenomenon in mountain areas. Generally, these interventions are inspired and conceived exogenously and often involve pace, scale, priorities and operating mechanisms not well-known to mountain areas and people. Most importantly, the development interventions are based on approaches and models which were not conceived and designed for mountain areas. Consequently, they have generally proved to be less relevant, highly resource extractive and quite ineffective to handle problems of mountain areas (Rieger 1981 and Sanwal 1989).

Hence the need for an alternative approach and framework for designing development strategies which are in keeping with the conditions of mountain areas. The central focus of such a framework would be the mountain perspective, the understanding and incorporation of which alone can determine the relevance and effectiveness of any development intervention in these areas (Rhoades 1988). The 'mountain perspective', described simply, means explicit or implicit consideration of specific mountain conditions or characteristics and their implications while designing and implementing activities in mountain habitats. In fact the preliminary enquiries into factors and processes contributing to the negative changes mentioned earlier indicated that the latter are largely a consequence of disregarding specific mountain characteristics and their operational implications by public and private interventions in these areas.

In other words, an important lacuna in conventional development strategies in mountain regions is the absence of a mountain perspective. In what follows, we discuss this perspective by elaborating on specific mountain characteristics and their implications. The consideration of development imperatives of specific mountain characteristics provide a completely different perspective on development approach and strategies for mountain areas. The relevant dimensions of this approach and the conventional development approach in mountain areas are compared to illustrate the point (Jodha 1990a, 1990b).

The important conditions characterising mountain areas which, for operational purposes, separate mountain habitats from other areas are called here 'mountain specificities'. The six important mountain specificities (some of which might be shared by other areas such as deserts in the plains) considered here are: inaccessibility, fragility, marginality, diversity or heterogeneity, natural suitability or 'niche' (including man-made ones) for some activities/products in mountains, and 'human adaptation mechanisms' in mountain habitats. These characteristics are not only inter-related in several ways but within the mountains they show considerable variability. Moreover, most of them have both biophysical as well as socio-economic dimensions.

Due to slope, overall terrain conditions and seasonal hazards, *inaccessibility* is the most known feature of mountain areas. Its concrete manifestations are isolation, poor communication and limited mobility. Besides increasing the overhead costs, it reduces the feasibility of several development activities in mountains. *Fragility*, the second important characteristic, results from altitude, slope and various geological factors, and makes mountain areas vulnerable to rapid degradation with even a small disturbance. This obstructs development options involving higher resource-use intensities.

Marginality refers to the status of an entity which counts the least in the context of the 'mainstream' situation. Mountains, both due to their natural circumstances and man-made handicaps, share the attributes of marginal entities, and suffer their consequences including disregard and overexploitation by the 'mainstream'. Also, due to factors like elevation, altitude, steepness and orientation of slopes and associated other biophysical factors, mountains are characterised by immense variations among and within ecozones. The *diversity* phenomenon applies to all the mountain characteristics

and forms the basis of a complex of production constraints and potentialities in mountain areas.

Owing to their specific environmental and resource-related features, mountains provide a *niche* for specific activities and products. These are a potential source of comparative advantage to mountains over plains and could form focal areas for mountain development. To handle constraints and harness opportunities offered by mountain conditions, mountain communities have evolved and inherited various technological and institutional *adaptation mechanisms* (such as terracing of steep slopes, farming-forestry linkages and provision of common property resources). Most of them are becoming ineffective or unfeasible in the changed demographic, institutional and technological contexts, but their rationale can be used for designing options for the sustainable development of mountain areas.

Mountain characteristics and conditions and their inter-relationships have several operational implications, the understanding and incorporation of which can enhance the relevance and effectiveness of development interventions in mountain areas. They are manifested by objective circumstances and patterns of activities dependent on them.

The objective circumstances created by mountain specificities can be seen in terms of a set of constraints and potentialities that influence the choice and pattern of activities in the mountains. Distance, physical isolation, high transport cost, poor mobility, difficulties of logistics and infrastructure, vulnerability to risks due to human action and natural hazards, limited input absorption capacities, limited production opportunities, and limited exposure to and limited replicability of experiences from the plains are some of the important elements of objective circumstances in mountain areas.

Features such as inaccessibility, fragility and marginality contribute to them in different ways. On the positive side, the scope for diversified activities, the presence of—often unique—high potential areas and activities are also a part of objective circumstances in mountain areas. Acting as constraints or opportunities, these objective circumstances condition the patterns of resource use as well as types of production, consumption and exchange activities in mountain areas. They include both the traditional arrangements and practices as well as present-day public interventions. They represent human efforts through technological and institutional means, at individual and collective levels, to adapt to mountain circumstances or to adapt the latter to human needs.

The objective circumstances are products of both individual mountain conditions as well as their inter-relationships. Consequently, a fuller understanding of the mountain specificities and the nature of their interlinkages alone can help the incorporation of their imperatives in development designs. A review of public policies and programmes in selected areas of the Himalaya by ICIMOD revealed that the conventional development interventions either completely disregard the imperatives or partially consider them. Promotion of monocropping and narrow horticultural specialisation, despite imperatives of diversity or high resource use intensification and despite the fragility of mountain resources, are two of several examples in this respect.

The insensitivity of development interventions to mountain specificities is less because of lack of knowledge about mountain conditions and more on account of the decision-makers' perceptions, which are strongly conditioned by a plains-perspective of mountain situation. Consequently, mountain conditions are treated as constraints or opportunities depending on how the plain-perspective tends to judge them. Disregarding their interlinkages, the 'constraints' or 'potentialities' are handled in a sectoral mode, again by using norms and procedures evolved in non-mountain contexts. This disregard is more pronounced when it relates to the objective circumstances generated by inter-relationships and multiple dimensionalities of mountain specificities.

As stated earlier, most of the mountain specificities have biophysical, socio-economic and cultural dimensions. For instance, diversity is found in the physical and biological features of mountains as well as in the socio-economic and cultural life of mountain people. The same applies to the marginality, fragility and inaccessibility characteristics (Jodha 1990a). The complex of mountain specificities and their multiple dimensions help in presenting an array of positive and negative attributes of the mountain situation. The focus of development interventions should be on the protection and enhancement of positive attributes and the maximisation of their role in development processes.

The opposite could be said about the negative attributes. For example, while biophysical diversity as a source of resilience and sustainability of resource-based activities may need protection and support, socio-economic diversity manifested through inequities may need reduction. Similarly, approaches to fragility or marginality of different types may need different approaches.

When translated into practical terms, such perspectives would call for basic changes in development goals and priorities to accommodate multiple concerns. Development goals, priorities and mechanisms would need to be described and defined in broader terms with an explicit focus on issues such as environmental equity, stability, long-term sustainability, participatory development and planning from below, etcetera, besides economic betterment. Thus a development approach based on the mountain perspective would call for a widening of the conventional development goals focused on productivity and income growth.

Again, due to the multidimensionality of mountain specficities and the inseparability of the sustainability of resource base from its use pattern and productivity, development strategies in mountains need to be strongly resource-centred. The resource characteristic (fragility, diversity, niche, etcetera) should

determine the choice and pattern of resource use. This, in turn, should be directed not only to current productivity but also to the sustained use of the resource base.

This is in contrast to the conventional approaches where (*i*) either the resource-focus is missing (as in the case of product and service oriented development interventions like tourism and horticulture) or (*ii*) the resource focus has a strong extraction orientation (as in the case of mining, timber and hydropower-related interventions). Furthermore, in order to respond to the imperatives of interlinked mountain specificities, the prospective resource-centred interventions will have to be sensitive to heterogeneity and linkages characterising mountain resources and their dependent activities. For example, unlike the sectorally focused conventional forestry projects, the new initiatives in this field would be sensitive to the concerns of forestry-farming linkages, biodiversity and mountain hydrology in addition to the short-term commercial gains from timber.

Most of the mountain specificities are interlinked because of the commonality of their causes. For instance, the degree of diversity, fragility, marginality, inaccessibility and human adaptation mechanisms are, in different measures, directly linked to factors such as elevation, slope angle/orientation, as well as climatic factors. Similarly, partly because of the commonality of causative factors and partly because of their crucial interdependence at usage level, a number of mountain characteristics are invariably influenced by any disturbance or treatment extended to one or the other.

The consequent impact could be positive or negative; for example, when the inaccessibility problem is handled by the construction of a mountain road, fragility due to steep slope and associated vegetation is negatively affected. Similarly, accessibility induced by extraction of resources links the mountain characteristics such as niche and inaccessibility. On the other hand, improved accessibility can reduce the degree of marginality of an area or a mountain community (Jodha 1990a).

The interlinkages between mountain specificities give rise to positive or negative side-effects of any development intervention that focuses on any single mountain specificity. To harness the positive side-effects and restrain the negative ones, it is essential to take a total and integrated view of an intervention vis a vis its targeted mountain characteristics. Mountain specificities thus serve as a compelling basis for an integrated approach to mountain development. This integrated approach based on the mountain perspective is very different from the conventional integrated approach in several ways.

First, it is a compulsion imposed by mountain characteristics rather than a product of administrative convenience or a part of a fad inducing the use of 'integrated' as a prefix to any development activity. Second, under the conventional approach, activities with common (or centralised) funding, common administrative control, common operational location, etcetera, are often designated as 'integrated approach to development'. In the case of the new approach, however, none of the above attributes or the simultaneous conduct of multiple activities is necessary.

Integration under the new approach implies fuller consideration of the main and side-effects of any development intervention due to the inter-relationship of different mountain specificities. This may apply to the choice of option designed to fulfil any development goal or to any programme directed to handle or harness attributes of specific mountain characteristics.

To illustrate the point one may take the case of the development of a new crop variety for mountain areas. The integrated approach to this option would imply the consideration of imperatives of different mountain conditions rather than concentration on the yield potential of the crop alone. Accordingly, crop attributes like high value, low weight, low perishability and local processibility would be emphasised due to the 'inaccessibility' problem; low input cost, low resource extraction, greater dependence on local resource regeneration, etcetera, would be focused upon due to the 'marginality' and 'fragility' characteristics of mountain areas; the wider adaptability and suitability for multiple uses would be considered to match the imperative of 'diversity'.

Similarly, an integrated approach to communication infrastructure for handling the 'inaccessibility' problem will go beyond the construction of roads alone. In order to respond to the imperatives of mountain characteristics like diversity, fragility and niche (which are related to inaccessibility in several ways), the interventions would have to focus on multiple, small-scale, widely accessible facilities with lower overhead costs, such as donkey tracks, waterways and ropeways rather than tarmac roads alone.

Mountain characteristics like inaccessibility, fragility, marginality and diversity (restricting the advantage of scale) tend to reduce the feasibility of several development options and increase the overhead costs of development interventions. This is more so when feasibility norms and the cost-benefit calculus evolved for non-mountain areas are applied to mountains. The inter-relationship of various mountain specificities creates a complex of externalities (i.e., negative and positive side-effects of any intervention), which the narrowly designed conventional development norms and procedures are unable to handle.

There are several issues which cannot be captured by the conventional cost-benefit approach (Paranjpye 1988). A few of them are: sustained bio-diversity as a part of human heritage; ecological equilibrium and environmental stability; less and immediately visible hydrological and related consequences of development interventions; a variety of upland-lowland linkages; and equity issues in sharing invisible costs and gains of mountain development.

However, under the conventional approach, rather than revising deve-

lopment norms to accommodate the requirements of mountain areas, decisions are made favouring activities or projects which have the following attributes: high economic pay-offs (rather than other unquantifiable gains); greater contribution to the national economy (rather than the well-being of mountain communities); sectoral focus (disregarding the interlinkages); and high potential for fiscal distortions. The last one is reflected by a variety of subsidies which, besides creating dependency among the people, tend to project the mountains as permanent liabilities for the mainstream economy. These tendencies will persist unless development initiatives are sensitised to the mountain perspective, which alone can help to project mountain realities not as constraints but as objective circumstances requiring specific treatment (Sanwal 1989, GOI 1982).

In order to make development approaches relevant and effective in mountain areas, it is necessary therefore that the latter's specific characteristics be made a key consideration while designing development interventions. Understanding mountain specificities and their inter-relationships, and their incorporation in development designs can form a functional and objective basis for an integrated approach to mountain development. The acceptance of this approach may lead to several basic changes in the development strategies for the mountains.

Once integration based on mountain characteristics, both at the conceptual and operational level, is achieved, other requirements such as resource-centred development, multiple goals of development, and even participatory development, will also be satisfied. It may be pointed out that integrated development, according to our approach, does not necessarily mean the simultaneous adoption of multiple activities. This sort of 'integration', involving a simultaneous coverage of all activities, seldom proceeds beyond a computer terminal.

The essence of 'integrated development' emerging from an understanding of mountain characteristics, involves a two-way adaptation process wherein specificities are adapted or modified to suit productive activities and activities are chosen and designed in such a manner that they fit well with the constraints and potentialities reflected by resource specificities. Terracing and growing shallow-rooted crops on mountain slopes with thin top soil are two examples of this. Broadly speaking, development interventions should generally be of two types: they should either focus on harnessing resources or should involve the promotion of activities possible in a particular resource context. However, the two are ultimately inter-related.

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