

The Environment-Development Dilemma: Towards A Solution

It is by now a well-recognised fact that to achieve the two paramount objectives of development of mountain areas, namely, development of an economically and environmentally sound ecosystem and poverty alleviation through promotion of an ecologically sustainable and diversified structure of economic activities, requires a distinct development approach. The need to maintain ecological balance places a

¹ *A list of ICIMOD documents of direct relevance to this theme is given in the Annex.*

² *Report on the Third Session (11-28 April, 1995) of UNCSD, as reproduced in the Report of the Organising Committee of the Mountain Forum, 21-25 September, 1995, West Virginia, USA, Annexure VIII. pp 26-27.*

certain degree of constraint on development activities; to the extent that environmental conservation and development apparently imply two conflicting approaches. On the other hand, alleviation of poverty and improvement in the standards of living could offer better chances for environmental sustainability and ecological preservation, as poverty and environmental degradation are found to go together and are often generated by the same processes.³ In fact, the mountain ecology can offer a special advantage for certain kinds of income-generating activities. Often, such activities, in addition to being quite compatible with the needs of environmental protection, can even contribute to enhancement of the mountain ecology. In such cases, development and environment can be mutually supportive and reinforcing. The critical issue, therefore, is to choose a pattern of development activities that could best meet the two stated objectives.

Most development activities impinge upon the environment and adversely affect the ecological balance of the mountains. It would be unreasonable and unfair to the mountain people if, for that reason, no development activities were to be undertaken in mountain areas. A reasonable and realistic approach would be to evolve a structure of development activities that, in totality, produce the minimum adverse impact on the environment and, concomitantly, to make efforts to compensate, as far as possible, for the damage to the environment by regeneration of the lost natural resources. This approach requires both a feasible methodology and the competence to assess the environmental impacts. This should apply not only to individual projects and activities on an *ad hoc* and partial basis but also to the total interlinked structure of directly productive activities and the infrastructure essential for effective realisation of economic benefits.

The above approach to development planning for mountain areas recognises and pleads for the conscious and judicious use of the concept of a **trade-off** between environmental preservation and economic development. Development involves environmental costs and restricting development for environmental reasons also involves human costs. There are no 'either-or' solutions, but there are varying combinations of environmental and developmental impacts from which suitable choices can be made. On the positive side, two factors should be recognised: one, mountains can offer special advantages for the development of certain activities because of the availability of natural and cultural resources not found elsewhere; and two, the economic progress resulting in poverty alleviation and a significant and progressive improvement in socioeconomic conditions would result in an environment in which the mountain ecology can be conserved.

In spite of general recognition of the issues in environment-development interaction, these have not been incorporated into development planning for mountain areas, primarily because of the lack of appropriate methodologies for use by plan-

³ *Evidence for this proposition, specifically in the context of the HKH region, will be compiled and analysed on the basis of data being collected currently under the programme on the State of Environment and Development of the MEI Division, ICIMOD*

ners. For example, the existence of a 'trade-off' could be well accepted, but it is not clear how to measure it. No doubt, the acceptable level of gain-loss combination would ultimately be a matter of judgement, and the decision-makers would make decisions on the basis of the perceived priorities of their governments and societies. But, in the absence of knowledge about gains and losses, there would be no basis for decisions other than the ones that are likely to be closer to the extremes. In fact, the present debate on **sustainable development** has, in a sense, got stuck due to the inadequacy of tools and methods to translate the generally accepted propositions into practicable decisions and solutions. Assessment of economic costs and benefits—both private and social—though conventional and applied within a limited time-frame, have been used in planning, programme formulation, and decision-making for individual projects. However, these methods are inadequate for internalising environmental costs which cannot always be assessed in monetary terms. What is more, longer time-frames and more comprehensive spatial considerations are needed to assess environmental costs than those used in common economic assessment. Since comparison of costs and benefits is possible only when both are presented in similar, commonly monetary, terms, a methodology for 'pricing' mountain resources (if only in relative terms) is needed to measure environmental costs. Such costs primarily consist of depletion and degradation of natural resources and their consequences.

So far, efforts to include environmental considerations in planning and decision-making have been confined to undertaking environmental impact assessment (EIA) of individual projects. While EIAs are appealing because of their direct relevance and easy application, they fall short of **incorporating** environmental considerations into overall development planning due to their partial, project-specific, and *ad hoc* characteristics. Also, EIAs are useful mainly at the project stage and do not take into account changes that may occur after a decision has been made and the project implemented. Not only is it essential to assess the overall impact of the project during implementation and beyond, but also, more importantly, it is necessary to evaluate the total impact of the structure of activities linked to each other in the development process generated by a programme, project, and activity.

Furthermore, in a development-focussed approach, assessment of environmental impact alone is not sufficient for decision-making. First, it is not easy to decide on the cut-off point beyond which the adverse environmental impact of a project or programme would warrant that it be disallowed. Second, environmental impacts need to be juxtaposed against the economic benefits flowing from the project or activity, in order to strike a balance between the objectives of environmental protection and economic development. As mentioned earlier, insofar as they use or affect natural resources qualitatively or quantitatively, most activities produce an impact on the environment. Therefore, if one were to select only those activities for mountain areas that either augment or have no adverse effect on natural resources and the ecology, then the mountain people's options for survival and development would be extremely limited. Consequently, any development strategy for mountain regions would have to be based on the recognition that economic development would certainly use natural resources, and that this would lead to environmentally-sensitive activities. At the same time, it will have to be based also on the recognition that

certain kinds of activities would not be economically sustainable beyond the very short term because of their ecological unsustainability and, therefore, would have to be ruled out as options in mountain development.

In between the two extreme types of activity; namely, (i) 'environmentally-benign' ones, which have a high income-generating potential, along with the potential to improve the environment (e.g., growing medicinal plants and fruit trees), and (ii) 'ecologically disastrous' ones which may only provide large short-term profits to non-local entrepreneurs and contractors, but no sustainable gains to the local people, at the same time inflicting large-scale and permanent damage on the environment (e.g., extractive activities such as mining and indiscriminate exploitation of forests); there is a whole range of activities. These activities have various combinations of income-generating and environmental impact potential. It is important that the potentials of different activities that are feasible in mountain areas are assessed, on an area-specific basis, in order to identify those that maximise income and minimise damage to the environment. Available methodologies for EIA and assessment of income potential for precise quantitative estimates may prove inadequate, and they need to be further developed by natural resource and environment specialists and economists. It should, however, be possible, even with current methodologies, to rank or categorise activities in environmental and economic potential ranges and identify activities with relatively low environmental impact and relatively high economic potential, in general, and then, in particular, for a specific mountain region and areas.

Selection of a pattern of activity is only one, albeit crucial, step in development planning for mountain areas. Such a selection should attempt to integrate environmental and economic considerations, in order to fully reflect these two facets in the planning process. Integration with and among other aspects of development, such as infrastructure, technology, and markets, within the overall framework of 'mountain specificities', is essential. Interrelationships among these various elements of ecological and development systems should be an essential ingredient of policies and programmes for mountain development. A schematic presentation of these elements at the interface is attempted in Chart I.