

CHAPTER 1

Breaking New Conceptual Ground

1. Higher Priorities and New Challenges in Mountain Development

Just as wise mountain farmers know intuitively when a parcel of highland ground is 'tired' and needs to be rejuvenated through fallow, special composting, or an offering to the spirits, mountain researchers and development practitioners should take action when cherished models and approaches of the past have become less productive. Like a mountain field, it is not that some models do not yield at all, but that they simply do not live up to the expectations and demands placed on them. Much of the thinking about mountain research and development, especially as it applies to the agricultural mountain economy, is simply tired and common place. As we approach the 21st century, it is time for bold, innovative thinking. New models, even if radical in their first appearance, should not be discarded by practitioners and planners, but rather debated and tried. Central to this new thinking will be the question of how exploited and neglected members of the human family — the mountain peoples — can be linked to researchers and development professionals in a true partnership, devoid of paternalism, so that mountain landscapes and ethnoscaples will flourish in the next millennium. Professional reversals in thinking are urgently required if the development community is to rise to this challenge (Chambers 1993).

A practical reason for thinking innovatively is that, finally, after decades of neglect, the mountain ecosystem is higher on the priorities of international funding agencies and stronger in the public consciousness. Thanks to the dedicated efforts of a small constituency of mountain

defenders (the Mountain Agenda group), mountains were elevated on to the political agenda of the UN Conference on Environment and Development in Rio de Janeiro in 1991 (see Denniston 1995 and Hamilton 1993 for an account of this intriguing story). Indeed, up to this time, without the analogue of a Jacques Cousteau or a Sting, it seemed that the mountains were to remain in the public's mind as little more than photographic entertainment in popular magazine travel sections. Even the tiny periwinkle or the panda received more air time and newspaper advertising space than mountains as a vital ecosystem, although these two green movement favourites depend on the mountain environment for their survival. **Our Common Future**, hailed as the most important environmental policy book in the 20th Century, gave no mention of mountains, while other ecosystems—deserts, coasts, rainforests, and wetlands—were defended with passion and political will (World Commission on Environment and Development 1987).

A cable car in the mountains of Pakistan - A.A. Junejo



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We are often puzzled about why mountains—which inspire so much awe and spirituality for humanity—could be so mindlessly exploited and then left to defend for themselves by outsiders and distant centres of power. One might surmise

that the mountain's overpowering vertical mass, the ruggedness of life, and complexity of landscape assault the psychology and energies of the alien lowlander. Mountains run against the often cited basis of human nature to exert the "least possible effort". The flatlander is simultaneously attracted and repelled. Like a backdrop to a Hindi movie, a two-week 'package' trek, or the harnessing of powerful waters with a dam, the hostile but beautiful mountains are quickly exploited by the flatlander before

retreating from their difficult reality. These are among the reasons why the small step taken in Rio must be applauded with enthusiasm by all of those who are concerned about the future of the mountains.

Once mountains came into the spotlight, it was not hard for many development organisations to understand the reasons why they deserve increased attention (see Denniston 1995; Mountain Agenda 1992; Rhoades 1993; ICIMOD 1993 and 1994). On the one hand, the quantity and diversity of genetic resources, abundant natural resources like water and minerals, and priceless cultural heritage demand protection for the common good of humankind (Denniston 1993). On the other hand, potential civil and physical disruptions to upland and adjacent human and natural ecosystems alert the global community to the political reality that policy and planning efforts cannot afford to ignore mountain problems. Whether defended on *anthropocentric* or *biocentric* terms, mountains are unequivocally crucial to both planet earth and human survival as we know them in these latter days of the 20th Century. In response to Agenda 21, Chapter 13, the UN Commission on Sustainable Development asked governments, international research and development agencies, and NGOs to formulate plans for future action. With the prospect of US \$350 million in funding (as requested by UNCED from governments over a period of seven years; although much greater amounts have been designated by Agenda 21 - see "promoting integrated watershed development and alternative livelihood opportunities" where the recommended level is \$13 billion from 1993-2000), an impressive number of groups has sprung into action, including NGOs, international agricultural research centres of the CGIAR, universities, and other development bodies (Mountain Institute 1995). Many of these organisations, despite the fact that the mountains had always been in their own backyards, had not taken them seriously as a global ecosystem worthy of protection in its own right until the historic meeting in Rio.

While the newly established concern for mountains and their traditional inhabitants must be applauded, at least five new challenges arise as research and planning stakeholders with few direct experiences in the moun-



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tains arrive armed with new agendas and projects.

First, in addressing immediate problems and future concerns, it is important not to forget the past. To quote Winston Churchill (1874-1965) "*The farther backward you can look, the farther forward you are likely to see.*" This is es-

pecially true in terms of taking note of and absorbing the lessons found in the vast and rich scientific literature on mountain environments and cultures published in this century. Sixty years ago, Roderick Peattie (1936), in his classic, *Mountain Geography*, wrote:

A bibliography of the scientific work on mountains would be overwhelming. The store of knowledge which has resulted from the studies would itself be of mountainous proportions.

As scientists and development practitioners with non-mountain specialisations (e.g., production agriculture, economics, or conservation ecology) turn their attention towards the uplands in response to funding opportunities provided by Agenda 21, it behoves them to learn from this massive literature if they do not wish to waste the valuable resources and time of both donor agencies and mountain peoples.

Second, mountain scholars and planners must come to grips with the need for generalised, extrapolative research which respects local diversity (Hewitt 1988). The tightrope between global and local and the general and specific must be walked. However, there has been a marked tendency in the present post-modern era for all mountain disciplines to shy away from comparison, general principles, models, and interdisciplinary synthesis in favour of emphasising local diversity and geographical specificity (Rhoades 1992). I argue that this is fine, but only up to a

point. Unless we wish to pile up idiosyncratic case studies about specific locales which have little theoretical or practical import, the development of a comparative and extrapolative research approach is absolutely critical for sustainable mountain development, especially in agriculture (see Chapter 4:3 of this book for an elaboration on this point).

Third, venues must be created to make mountain peoples central to planning for the future of their homelands. Chapter 13, Agenda 21 noted the importance of indigenous peoples who inhabit the mountains and serve as the cultural guardians of rich storehouses of both knowledge and biological resources desperately needed by the world at large. In particular, prehistoric farming originated in the mountain *cradles of domestication* where today the landraces and wild species of the major food crops (wheat, rice, maize, potatoes, and barley) persist *in situ* under the management of traditional farmers (Flannery 1972). Chapter 13 also alerted us to the loss of both knowledge and biological material. Understanding social change and planning appropriately in order to preserve these mountain treasures of knowledge and nature will require integration of the full range of human sciences into the mountain development process, which has been largely dominated so far by the biophysical sciences.

Flood disaster - File photo



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Fourth, the high mountainous regions and their inhabitants will be dramatically affected by global change, in terms both of human dimensions and climate change.

Although the world system has been penetrating mountain areas for several centuries, the pace and nature of globalisation—urbanisation, migration, market penetration, and transportation/information—have intensified in the past half century (Sharma 1993). The dynamic articulation between global forces and local responses must be studied and incorporated into planning. Also, since mountain agriculture is managed in agroecological belts along altitudinal temperature gradients at the highest altitudes in the world, minor variations in the global climate will directly affect local water sources, soil microbiology, cropping patterns, and vegetative cover (Barry 1992). Unless addressed by our world mountain initiatives, this subtle and silent force of global warming could bring about the highland devastation long predicted by doomsayers. The cause, however, will not be the peasant farmer—as assumed by many prophets today—but industrial pollution and other greenhouse drivers which lie far beyond the mountains.

Fifth, but not last in priority, is the recognition that demographic, economic, and ecological changes are inevitable (as they have been for centuries) and appropriate institutional structures must be continuously created by activists, academics, governments, and international agencies that will help—not hinder—mountain peoples in the quest for quality livelihoods. The high wire which mountain scholars and planners have to walk is that of designing new programmes which combine the best from the indigenous past and present with actions that effectively and sustainably respond to global change and local needs.

In this book, I will touch on all of these new challenges to mountain agricultural development. In doing so, I will make one bias clear: there will be no solution that ignores the role and potential of mountain farmers and communities (either as engaged or resistant actors). Overwhelmingly, the inhabitants of the mountains live today as they have for centuries, as farmers and herders. Approximately three-fourths of all mountain dwellers in the Hindu Kush-Himalayas (HKH) still reside in hamlets and make their living through basic food production. The future of mountain ecosystems is bound up with these rural people and how they themselves, with or without

outside help, will continue to survive. Will this survival, moulded by outside forces or internal ones, result in the destruction of this precious ecosystem or are there solutions, ways to thinking, that can help us achieve a sustainable future?

No amount of pleading or well-intended sentiment will advance the mountain cause unless our theories, methods, empirical data, and development institutions are appropriate and demanding of intellectual precision. It is no longer sufficient to merely talk more about the importance of mountains. The hard work must now begin. In writing this book, I was challenged to come up with some new paths of thinking, some new models of how to focus on the issue of farming in the HKH; the highest, most populous mountain area in the world. This has not been an easy task. Much of what is written here has been said before in part or in whole by other seasoned mountain scientists (e.g., Banskota and Jodha 1992; Ives and Messerli 1989; Allan et al. 1988). I am hoping that, in restating the issues in a new light, we can break fertile ground for a sustainable mountain agriculture in the 21st century.

2. Eight Key Steps towards Sustainable Mountain Agriculture

This book is divided into eight sections. Each section is stated in terms of an "action" that systematically and accumulatively leads to the next activity. Hopefully, through this series of logical action steps, based on reflection and critical analysis, I hope to be able to provide a dynamic framework for sustainable mountain agriculture which is innovative; based on systematic data collection and analysis; scaled according to time and space; clear on the systemic linkages; and user friendly for farmers, communities, scientists, and policy-makers. I will not dwell long on a critical analysis of the extensive literature on mountain agricultural issues, although a thorough review was undertaken before writing this book (see also Uhlig 1995). Likewise, it cannot resolve many of the ongoing debates, e.g., causes of population dynamics, degree of degradation, or impact of commercialisation, for these are topics requiring a great deal of academic

research. Rather, the purpose of this book is more conceptual and programmatic for sustainable agriculture in the HKH and hopefully relevant to other mountainous regions of the earth.¹

The Eight Steps Towards Sustainable Mountain Agriculture in the HKH are:

1. revisit critically *Himalayan Dilemmas and Mountain Perspectives*,
2. contextualise the concept of sustainability in mountain agriculture,
3. scale the social and spatial hierarchies relevant to sustainable agriculture,
4. map and systematically collect data on the agricultural systems and societies of the HKH,
5. trace carefully the linkages between farming, poverty, and the mountain environment,
6. link land users, scientists, development professionals, and policy-makers through stakeholder and perception analysis,
7. design an approach for working with and learning from mountain peoples on their terms, and
8. prepare an action plan for Mountains in the New Millennium.

¹ Due to a host of shop-worn excuses, this report obviously has a bias towards research about and conditions in Nepal. I have tried to reach beyond this constraint, but it would be intellectually dishonest to declare that I have escaped this other "Himalayan Dilemma".