

*Session IV*

**Promoting Improved and  
Diversified Incomes for  
Vulnerable Rural and  
Marginalised Mountain  
Peoples**

# Enhancing Economic Opportunities for the Mountain Poor

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## Introduction

This paper discusses options developed through ICIMOD's agriculture, rural and income diversification projects designed to enhance incomes for the poor and the marginalised in mountain areas that are environmentally friendly. The paper begins with a brief discussion on the mountain condition, characterised by absence of or limited extent of conditions historically associated with enhanced economic performance the world over. The options indicated for the poor help in adaptation to constraining situations created by the absence of these conditions which are required for satisfactory economic performance.

## The problems

The elimination of poverty and inequity, promotion of ecological or environmental sustainability, and the achievement of increasing and more durable levels of economic growth and prosperity are subjects currently dominating policy discourse and development interventions at different levels all over the world.

Mountain areas stand quite apart from other ecosystems or from mainstream, socioeconomic systems in the plains in terms of the imperatives of the three thrust contexts mentioned above. The crucial factor responsible for this difference is the missing mountain perspective; that is, understanding and incorporating the imperatives of mountain specificities such as fragility, diversity, marginality, and inaccessibility in designing for and implementing development interventions in mountain areas. The mountain specificities and their implications for development interventions in mountain areas have been well elaborated by Jodha et al. (1992) and Jodha (2005) and will not be discussed here.

The lack of integration of or adaptation to the mountain specificities in policy and planning for the development of mountain areas is partly to be blamed for the slow pace of economic development in these areas. The development models that have evolved over time have primarily focused on the plains. Their application to mountain areas has ignored the specific conditions and imperatives of the mountain condition. The missing mountain perspective has,

in a variety of ways, obstructed the effective application of development models designed and applied by developing countries during the last five decades. This could be elaborated upon with reference to the following central prerequisites historically associated with enhanced economic performance in many different countries and their general absence or limited presence in most parts of the mountains. These often interlinked prerequisites or conditions relate to both (a) production processes, and (b) post-production activities.

### **Conditions relating to production processes**

- Intensified use of resources which, historically, facilitated and favoured achievement of increased economic performance in most countries of the world; in mountain areas intensified use of resources was prevented by limited accessibility, fragility, marginality and, to some extent, diversity and subsistence-oriented traditional adaptations (Table 1 and Jodha 2005).
- Specialisation generated by incentives to earn big profits and associated economies of scale which, historically, has helped to enhance economic performance elsewhere were obstructed in mountain areas by limited accessibility, fragility, marginality, and diversity and as well as more broadly (rather than purely economically) focused human adaptations developed by mountain communities.
- High productivity and generation of tradeable surplus necessary for increased exchange and investment necessary for high economic performance, were obstructed by the same limited accessibility, fragility, marginality, and traditional human adaptation practices in mountain areas.

### **Conditions relating to post-production processes**

- Infrastructure for both value addition and market links essential for enhanced economic performance that also facilitates intensified resource use was obstructed by limited accessibility, fragility, marginality, and specific human adaptation measures.
- Equitable external links to ensure favourable terms of trade and harnessing of niche opportunities to enhance economic performance were also obstructed in mountain areas by inaccessibility, fragility, marginality and diversity, and so on.
- Finally, human capacities and responses capable of identifying and capturing external income-generating opportunities were also blocked by the same conditions of limited accessibility (which isolates mountain areas and require costly logistics to overcome), physical and social marginalities, unconnected diversities, and generally localised subsistence systems in mountain areas.
- Policy makers and planners are not unaware of these constraining features in mountain areas, but mountain people's adequate and integrated treatment or effective adaptation to these conditions make these conditions unclear for policy makers and thus, addressing them continues to be a major gap in mountain development strategies.
- On the other hand, the potential opportunities and comparative advantages of mountain areas for niche resources and the dimensions of mountain diversity are important features that converge with the conditions that have been observed to promote income and prosperity and are part of the growth processes observed all over the world. But harnessing these potentials has once again been obstructed by poor accessibility, fragility, marginality, and

low levels of human skills in mountain areas. Furthermore, wherever these opportunities have been harnessed has been brought about by mainstream external systems, largely for their own benefit. The exploitation of hydropower potential, minerals, timber, and NTFPs are prime examples where, because of the socioeconomic and political marginality of mountain areas, unequal terms of trade and unequal highland-lowland links have been forged and mountain communities have received very little benefit in terms of growth and prosperity. Valleys that are somewhat accessible are an exception, and the conditions limiting economic performance are not very strong or absent.

## Conditions relating to environmental sustainability

The paragraphs above relating to 'disconnects' between mountain specificities and conditions historically associated with high economic performance also indirectly apply to the question of environmental sustainability.

**Table 1: Preconditions associated with high economic performance (gains) and their 'disconnects' with the imperatives of mountain specificities**

Mountain features (mountain specificities)	Conditions and processes conducive to high economic performance					
	Relating to production processes			Relating to post production processes		
	Resource use intensification	Specialisation and economies of scale	Tradeable surplus generation	Infrastructure, access to markets	Equitable external links	Human response capacities
<i>Limited accessibility</i> : high costs of mobility, low dependability of external support or supplies	(-) <sup>b)</sup>	(-)	(-)	(-)	(-)	(-)
<i>Fragility</i> : vulnerability to degradation with increased land-use intensity	(-)	(-)	(-)	(-)	(-)	(-)
<i>Marginality</i> : limited and low earning opportunities, resource scarcities and uncertainties, cut off from the 'mainstream' economy, social vulnerability	(-)	(-)	(-)	(-)	(-)	(-)
<i>Diversity</i> : temporally and spatially highly diversified products/land-use patterns	(+) <sup>b)</sup>	(-)	(+)	(-)	(-)	(-)
<i>Niches</i> : potential for numerous, unique products/land uses	(+)	(+)	(+)	(-)	(-)	(-)
<i>Human adaptation mechanisms</i> : traditional sustainable resource management, diversification, recycling, adjusting demands to changing supply situation	(-)	(-)	(-)	(-)	(-)	(-)

Source: Table adapted from Jodha (2005)

Notes: 1. (-) and (+) indicate 'extremely limited' and 'relatively high degree of convergence' between mountain specificities and conditions historically associated with economic performance in many countries. The situation may differ between more accessible (commercialised) and poorly accessible areas, as illustrated by the contrasting situation of different mountain areas in China, India, and Nepal (Jodha 2002).

A closer look at the situation in better off or developed pockets in mountain areas shows that wherever, consciously or unconsciously, development efforts were directed to enhance the degree of convergence between conditions historically associated with growth and prosperity and the imperatives of mountain specificities (for example, in Himachal Pradesh, India; Ninang county, China; and Ilam district, Nepal, to cite a few), the areas and communities benefited from development interventions.

Due to steep slopes and biophysical fragility, mountain landscapes are extremely vulnerable to degradation and depletion even from minor disturbances. Traditional communities have learned, through trial and error, to manage these landscapes by restricting their use or choosing low intensity practices through a range of folk agronomic and folk engineering practices. These helped to balance production and conservation concerns at low population levels and with subsistence-oriented populations, but were not able to satisfy conditions associated with enhanced economic performance (Jodha 1998). The extension of 'mainstream approaches that need intensified resource use through both modern agricultural practices and overexploitation of natural resources for economic gains has triggered a process of natural resource degradation. Ignoring the imperatives of fragility, marginality, diversity, and the sensitivities of niche resources as well as the delicate links between them (e.g., improving accessibility with little concern for fragility) has exacerbated the environmental vulnerability of mountain areas.

To the above, one may add the major side effect of close integration of mountain areas into mainstream economies that are demand-driven and extractive of resources. This has encouraged rapid socioeconomic differentiation in mountain areas, leading to disintegration of the collective stakes of mountain communities in natural resource management and an increase in poverty and inequity. Consequently, the mountain poor are faced with mutually reinforcing environmental and economic vulnerabilities (Jodha 2005). This issue is intimately linked to the concern of the present discourse at global levels for addressing issues of poverty and inequity without damaging the environment.

## **Visible shifts and persistent gaps**

The preceding brief account of the objective circumstances in mountain areas and the fact that they are ignored or little understood, and the failure to incorporate them in development interventions, provides a general picture of the conditions in the HKH region. At the same time, the region has many scattered success stories of economic development (Jodha et al. 1992). The process of change has picked up following lessons from these success stories, enhanced by concerns and advocacy for mountain areas and people at global to local levels, and by the visible shift in the perspective of donors, advocacy groups, NGOs, and local communities in recent years. Particularly during the post-Rio (Summit on Sustainable Development) period, increasing attention has been given to mountain areas. The increased concern for environmental sustainability has also helped to secure greater attention to sustainable mountain development.

To complement the above shift in perspective, regional member countries (RMCs) have built up a substantial infrastructure in terms of professional manpower, research and development facilities, support systems, and investment allocation for mountain areas to promote economic development. The major gap in development efforts and processes, however, is the persistent limited attention to mountain specificities and their imperatives, hence reducing the impacts of development interventions. Should they continue to be ignored, it could lead to extremely negative side effects for the environment and the socioeconomic situation (Jodha 2005). Another gap is the continual lack of attention and concern for poor and marginalised

groups in mountain areas. This is an important concern for those formulating sound mountain development strategies.

## **Placing ICIMOD's concerns in context**

In a paper dealing with ICIMOD's or ARID's work on economic options for poor and marginalised groups in mountain areas, the purpose of the above discussion on a general framework based on a mountain perspective is to identify and address the constraints and opportunities as contexts for ICIMOD's vision and action. In other words, the issues highlighted above, including the missing or limited presence of conditions historically associated with enhanced economic performance in mountain areas as summarised in Table 1, constitute the fundamental contexts for ICIMOD's input in facilitating integrated mountain development to address the concerns of poverty, equity, and environmental sustainability. While reflecting on the potential contributions of ICIMOD in the HKH region, it should be stated that in terms of both human and other resources, ICIMOD is too small an organisation to play a comprehensive and direct role in the development process. Besides, the organisation's mandate does not encourage ICIMOD to devote resources and capacities to tasks for which RMCs have resources and comparative advantages. At the same time, however, ICIMOD has its own comparative advantages indirectly contributing to mountain development as discussed below.

## **ICIMOD niche 1: knowledge-based input**

The more appropriate way to recognise and harness ICIMOD's role in facilitating mountain development is to look for niches and activities for which it has a comparative advantage and to which the RMCs have not been able to give enough attention, indicating the approaches and steps to sensitise development interventions to mountain specificities and promoting increased attention to issues and people that have been bypassed or perceived as marginal.

The niche or opportunities for ICIMOD have an important structural dimension. ICIMOD, being a non-political, inter-governmental, autonomous regional centre with ownership and partnership of the member countries, has a unique opportunity to learn and disseminate knowledge based on inter-country experiences. This implies collaborative learning and sharing of best practices and appropriate options for development interventions. ICIMOD's comparative advantage or niche while working with partners in the RMCs lies in being able to identify and advocate for development options rather than direct participation in development activities. In the particular context of the policy programme process, this implies (i) identification of and advocacy for choices based on information and analysis, and (ii) generation and evolution as well as testing and dissemination of options that fit into the overall goals of governments in mountain areas for overall development as well as for development approaches for the poor.

## **ICIMOD niche 2: focus on 'the bypassed'**

Despite identification, acceptance, and implementation of development options, mainstream development processes in mountain areas – because of various institutional handicaps and

capacity-related reasons – tend to bypass a vast number of poor and marginalised people. This is both due to the limited ability of mainstream processes to understand and address the reality of these groups on the one hand, and the limited capacities of the latter to participate in and capture the opportunities associated with mainstream development processes. These bypassed groups constitute an important constituency which needs improved understanding and increased involvement in the development process. ICIMOD places strong emphasis on promoting income-generating options for these groups. By the very nature of the context of the problem, such options have to be low-cost, centred on local resources, manageable locally, and replicable on a wider scale, in order to match the objective realities of the poor, marginalised, and vulnerable groups (such as women, tribals, and groups with limited physical linkages in rural areas). To sustain these options productively, local resource management and conservation are equally important. Given ICIMOD's resources and its special focus on the problems of the poor and the marginalised, promoting the options mentioned above is another niche for ICIMOD.

## **The Focus of ARID**

ICIMOD's Agriculture and Rural Income Diversification (ARID) Programme focused specifically on this second niche area. The programme relates to the situation and options for poor and marginalised groups. Such options may look marginal to mainstream systems, but they constitute mainstream options for the poor and the marginalised. The activities of ARID in association with other action initiatives at ICIMOD largely focused on demarginalising the poor and marginalised groups by enhancing high payoff options and demonstrating and helping convert the 'small options' for the marginalised into mainstream interventions, thus making these options an integrated part of mainstream development efforts.

The remainder of this paper will illustrate these points with practical examples based on the work of ARID over the last four years and on lessons learned from ICIMOD's previous work and that of partner institutions.

It is useful to indicate the manner in which the attributes of these options fit into the 'constraints and opportunities' framework (Table 1) discussed above. The following are some indicative inferences based on projects on (i) Himalayan honeybees, and (ii) women, water, and energy.

- (a) Adaptations or responses to inaccessibility: honey and honeybee enterprises involve high-value, low-weight or low-volume products whose mobility is less affected by inaccessibility. In the context of organic products, marketing constraints for these products are also relaxed.
- (b) Honeybees as a local resource as well as energy options based on local resources (such as water harvesting) are also less sensitive to inaccessibility.
- (c) The convergence between economic and environmental gains of these options also helps to harness niche products and diversity and contributes to reducing social marginalisation.
- (d) Furthermore, their links with indigenous practices, group action, and so on, takes care of concerns related to human skills.

(e) Finally, the economic gains involved are not hampered by the need for resource intensification, scale factors, and inequities of highland-lowland linkages.

## **Practical examples of impacts of ARID's work**

In the following discussion we illustrate the experience and impacts of mainly two projects: (1) Himalayan honeybees (2) women, energy, and water. Here we indicate their attributes and impacts on poverty and policy programme processes. In particular, we indicate what contributes to the effectiveness of such options. The two examples discussed below may look marginal compared to mainstream systems, but they constitute 'mainstream options' for the marginalised and poor groups bypassed by mainstream development interventions.

### ***Himalayan honeybee programme***

Sustained donor support for the Himalayan honeybee project (Apis cerana, the indigenous honeybees of the Himalayas and a niche product) has helped us to arrive at a good understanding of bee-plant-community relationships from the environmental and livelihood perspectives. After almost two decades of work, ICIMOD has developed a honeybee technology that has distinct pro-poor attributes. ICIMOD's programme on the Himalayan honeybee is the largest of its kind the world.

Beekeeping is not a new activity in the Himalayas and, hence, improvement of the indigenous practice or technology is understood and accepted by local people, more so as most of the work is done on farms. Raising bees does not require land, hence, the technology is suitable for marginal farmers as well as the landless poor. It does not have any negative impacts on the environment and the pollination services provided by honeybees generate both a tangible and intangible environment and economic benefits. The technology is women-friendly and helps women earn additional income. Furthermore, beekeeping is not confined to one product only and has multiple products aside from honey. Honeybee enterprises are versatile and can produce multiple products: multiplication of colonies provide pollination services; queen rearing is an enterprise in itself; cosmetics can be developed from wax, and so on. All of these provide new sources of income in rural areas. These factors, therefore, contribute to the wide acceptance of the technology. Efforts are now underway to upscale the project in Afghanistan, Bangladesh, Bhutan, India, and Nepal through partners with large rural development networks.

Examples of poverty reduction are given below.

- Studies carried out in Jumla, Nepal, show that beekeepers are earning an average of Rs 4,152 (US\$ 85) per year from their backyard bee farms.
- A beekeeper in Kaski, Nepal, has been able to earn Rs 55,000 (US\$ 775) in a year from selling bee colonies and queens.
- In Jumla, one beekeeper was able to sell honey worth Rs 40,000 (US\$ 563) in an year.

Thirty-two percent of arable land in the apple growing state of Himachal Pradesh are growing horticultural crops. Apples are the main cash crop in Himachal, accounting for 42%

(78,000 ha) of the total area under fruit cultivation and about 90% (277,000 mt) of the total fruit production. To many of the nearly 150,000 apple growers in Himachal Pradesh, apple growing contributes 60-80% of their total household income. The Himachal apple industry is estimated to be worth about US \$1.7 billion per year, with about US \$150-170 million being contributed directly and about US \$1.5 billion being contributed indirectly by providing jobs to thousands of people not only in Himachal but also in Asia's biggest fruit market in Delhi during the six-month apple-selling season.

ICIMOD studies reveal a drop in productivity in orchards all over Himachal State. In the early '90s farmers estimated a 50% decline in productivity, and the decline continued despite no decline in inputs. It was finally understood that the decline was the result of inadequate pollination.

This has led to the growth of a new vocation, namely, the use of honeybees for pollination. Beekeepers charge Rs 500 as security and another Rs 300 as pollination fees for one colony of honeybees each flowering season. The security money must be paid in advance and is refunded only if the colonies are returned intact. Farmers also sell the honey. Currently, demand for pollination services is increasing and supply has been unable to catch up with the demand.

ICIMOD's work on honeybees is now also gradually influencing policy as follows.

- In Himachal Pradesh, provision of subsidies has been introduced for renting honeybee colonies to farmers for apple pollination under a Government of India policy.
- Pakistan has also formulated a policy to subsidise beekeeping through low interest loans, training support, and provision of carpentry equipment.
- In Nepal, after the incorporation of beekeeping in the 10th Five year Plan, the government made provisions for demand-based training to farmers and is giving a 25% subsidy on beekeeping equipment and, in particular, on the purchase of beehives. It is also supporting the beekeeping resource centres established in various districts.

### ***Women, water and energy project***

A great many women across the Hindu Kush-Himalayas spend a considerable amount of time and energy daily carrying firewood and water to meet the needs of family members, agricultural activities and livestock raising. Many girl children are unable to attend school regularly just to fulfil these needs. Meeting the water and energy priorities of their households supersedes other priorities and, unless interventions that relieve women from this obligation are forthcoming, their participation in poverty reduction is unlikely to materialise. The feeling of drudgery is common among women who carry out these services.

If time budgets from water and energy activities can be reduced and harnessed into income-generating options, there is considerable scope to reduce poverty in a holistic sense in the rural areas of the HKH. The interventions designed should address practical, productive, and strategic needs. Practical needs relate to improved access to water and energy technologies that reduce drudgery, improve health, and save time. Productive needs are fulfilled when

women are able to use the time saved for generating income. Strategic needs are fulfilled by building women's capacity to organise themselves in ways that enable them to raise their voices and make their own choices.

Examples of poverty reduction have emerged in the form of various impacts after two years of project intervention at sites in Nepal, India, and Bhutan. In Bhutan, for example, women selected two options, one from each site. In Phobjikha Valley, women had to rely on firewood, as cooking gas was always available. Gas cylinders had to be transported by motor and the journey took half a day. The women decided to organise themselves and, after obtaining the necessary permission, were able to open a gas depot that can handle about 340 gas cylinders. The depot is managed by the women and the small profit they make from selling gas in cylinders provides a revolving fund for loans to women in the group. The time taken to gather firewood has decreased as demand for firewood decreased and, hence, drudgery has decreased as well. This intervention has empowered women living in the remote areas of the project economically.

In one project site in Bajeena, Uttaranchal, India, women found an innovative way of recharging traditional water sources on mountain slopes. Because of the acute shortage of water in this area, women have spent the better part of the day every day collecting water. To overcome this problem, the women constructed 14 micro reservoirs spread spatially along the slopes to trap and stored rain water, which were then percolated in the soil, recharging the traditional spring. The women also planted multipurpose saplings to ensure slope stability, generate income, and ensure a steady supply of firewood and fodder. Grazing has been controlled in the area through social fencing. Supply of water has more than doubled since establishment of the reservoirs, reducing the time women spent collecting water. The time saved is being spent in income-generating activities funded by loans from the revolving fund the women themselves established. This success is being replicated by other communities in the area without help from ICIMOD.

In another site in Solan, rainwater harvesting linked with the introduction of improved cooking stoves has enabled women to gain multiple benefits in terms of saved time, reduced drudgery, availability of hot water, and improved health for the women and their families. The time saved has been used in income-generating activities. Two years after implementation of the project, the women from Solan are helping women in other villages to form groups and carry out similar activities.

In Nepal, the women have been able to establish a technology demonstration village which has allowed non-project beneficiaries to observe these technologies which have been used to reduce the time required for water and energy services and which has generated income from time saved. The technology demonstration village (TVD) has played an important role in spreading these technologies to many villages and has been instrumental in generating multiple benefits for women outside of the project area. Having seen the success of the project, the district development committee of Dhankuta is replicating the project in their programme areas. Women from other villages are exerting pressure to replicate the project in their own villages.

The project in Nepal has been selected as an example of a good practice by the Wuppertal Institute for Climate, Environment, and Energy ([www.wisions.net](http://www.wisions.net)) based on the a set of criteria (a. using a participatory process; b. simple, proven and cost-effective technologies; c. multiple benefits generated; and d. sustainability and replicability of the project) along with that it is a promising approach to address multiple needs – practical, productive and strategic.

This project is also gradually influencing policy at different levels.

- In Dhankuta district, the district development committee has set aside an annual budget for the replication of this programme.
- At the national level, the programme has been recognised by the Government of Nepal and upscaling is being considered.

Based on the work carried out, a tentative list of the attributes of good practice can be identified. A good practice would most likely be characterised by a large number of attributes which are not constant and can vary from project to project and change over time and space. A good practice also needs to ensure environmental, economic, and social sustainability. A tentative list of good practice attributes is provided in Table 2 and matched with the projects discussed above.

**Table 2: Attributes of good practices or options**

**Easy accessibility**

- Low cost, simple, and proven technologies
- Resource base (niche) present but not adequately harnessed
- Relevance in the lives of large numbers of rural people

**Use of the participatory approach**

- Active participation of local people, especially women and socially excluded groups
- Capacity building of local people to operate, manage, and repair technologies or practices

**Economic gains and equity**

- Productivity enhancing (less labour-intensive and time consuming, especially of women’s time and labour)
- Low or no risk activities that blend with traditional activities
- Local promoters of technologies
- Benefit-sharing
- Drudgery-reducing and income-enhancing technologies, especially for women
- Short gestation period

**Environmentally friendly**

- Environmentally friendly activities and technologies
- Environmental conservation services
- Clean and efficient technology developed, not entirely exotic

**Replicability**

- Builds on indigenous knowledge with new innovations
- Promotes socially and culturally acceptable technologies and options
- Selects partners with large rural development network
- Selects strategic national and local partners
- Anchors the project in a national programme and works with governments from the beginning

**Sustainability**

- Institutional capacity: local group is organised to run a business or programme and resolve conflicts
- Financial: local groups are able to mobilise, invest, and access resources internally and externally
- Environment: local groups are capable of conserving the local resource base

## Conclusion

Demarginalising poor and marginalised groups through enhancing high payoff options and demonstrating and helping convert the 'small options' into mainstream interventions is a slow process; most successful options and technologies available in the market are generally not suitable for the poor. This is partly due to the obstructions imposed by mountain specificities and partly because of the limited capacities and resource endowments of the poor. Options that appear to work for the poor need to be carefully designed to address the multiple dimensions of poverty and not only those related to income generation. Options that have been successful in the plains need to be first adapted to mountain conditions. In this context, we need to keep in mind some useful lessons in the context of poverty alleviation in mountain areas as listed below.

- Identify the right entry point to ensure active participation and empowerment.
- Identify and promote technologies that have distinct pro-poor, pro-women, and pro-environment attributes.
- Building the capacities of the poor in doing things the right way is more important than the provision of technologies.
- Help the poor organise themselves.
- Address the problems of the poor on a community basis by providing access to information, credit, markets, and complementary support.
- Avoid activities that require heavy external inputs and opt for the use of locally available resources.
- Anchor good practice pilot projects on existing national programmes to influence policy and ownership.
- Select strategic partners and institutions at different levels to scale up good practices.
- Long-term programme funding commitments are essential to generate and sustain impacts.

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