

Understanding Mountains to Improve the Livelihoods of Mountain People

“There is an important lacuna in the conventional understanding and assessment of problems and attempted solutions for mountain areas.” (Jodha 1992)

The Hindu Kush-Himalayan (HKH) mountains extend across eight Asian countries: Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal, and Pakistan. The majority of the people in these mountains and foothills depend on agriculture and the use of natural resources for their livelihood. About 90 per cent of the farmers in mountain and hill areas depend on marginal and small landholdings, where they typically cultivate less than one hectare per household. They augment their income by using other natural resources that provide additional food and services. As rural mountain households are multi-occupational and diversified, any attempt to improve livelihoods requires an integrated and cross-sectional perspective. Agriculture in mountain areas is, in general, unable to compete with plains agriculture in terms of producing food grains and staples on a large scale for the mass market. Nevertheless, agricultural production remains an important component of rural mountain livelihoods, and the great diversity afforded by high mountain conditions (biodiversity, climate, topography, culture) gives these areas a comparative advantage for producing a variety of ‘niche products’ for their own and lowland consumption.

The mountains of the HKH region are endowed with an extensive variety of high value, low volume products, such as non-timber forest products (NTFPs), medicinal and aromatic plants (MAPs), and honeybee products, and are suitable for cultivating temperate and off-season crops. However, the primary producers and collectors of these products generally receive a relatively low share of the returns due to insufficient knowledge of market chains, lack of processing facilities, inadequate quality control, and similar factors. The same holds true for mountain tourism which, despite its enormous potential within the HKH region, not only remains largely underdeveloped, but also rarely benefits the local population in the form of sustainable and non-exploitive employment and supply of services and local products. Despite the relevance for mountain people’s livelihoods, and the quick growth of trade in NTFPs and MAPs, national and regional policies have not been adequately developed, adapted, or implemented in the region. There is significant scope to generate more income locally by supporting mountain people to generate new livelihood options and add value to high value products and services.

The opportunities and challenges of mountain production have to be analysed in the given mountain context. Mountain areas are characterised by a high degree of fragility, marginality, limited accessibility, diversity, and specific niche resources, as well as human adaptations to these conditions, which both generate opportunities and impose constraints. These conditions are not exclusive to mountain regions, neither are they uniform across all mountain areas; however, in combination, and due to their high degree and crucial operational implications, they can be considered specific to mountains and are referred to as ‘mountain specificities’ (Jodha 1992). Table 1 provides a summary of the core mountain specificities, their biophysical foundation, their manifestations, and the implications seen as objective circumstances; and the imperatives that result from the latter in terms of appropriate responses to manage the above features (e.g., through choices and methods of resource use including nature and type of development intervention). Development interventions must be aware of and sensitive to these characteristics.

The concept of mountain specificities has been developed and revisited by the International Centre for Integrated Mountain Development (ICIMOD) over the last two decades (for example Jodha and Shrestha 1994). They are based on evidence and inference from numerous studies of mountain areas in different countries (e.g., Pant 1935; Guillet 1983; Bjønness

Table 1: Mountain specificities, their manifestations and implications, and resulting development imperatives

A. Niche opportunities	
a. Product of	<ul style="list-style-type: none"> Unique environment and resource characteristics of biophysical conditions (people's traditional practices in adaptation to specific mountain conditions are also part of these 'niche' opportunities)
b. Manifestations and implications	<ul style="list-style-type: none"> Potential for unique products/activities (hydropower production, tourism, horticulture, timber, medicinal herbs, indigenous knowledge systems) with significant comparative advantages over other areas Bulk of the potential remains underutilised (or, in some cases, there is selective over-extraction by external agencies)
c. Imperatives (appropriate responses)	<ul style="list-style-type: none"> Harnessing of 'niches' is an integral part of diversified resource use, using the rationale of traditional systems, modern science and technology, infrastructural support, and local participation
B. Diversity	
a. Product of	<ul style="list-style-type: none"> Interactions between different factors ranging from elevation and altitude to geologic and edaphic (soil-related) conditions, as well as biological and human adaptations to these conditions
b. Manifestations and implications	<ul style="list-style-type: none"> A basis for spatially and temporally diversified and interlinked activities, strong location specificity of production and consumption activities induced by heterogeneity Limited applicability of activities meant for wider application, and limits to scale-associated benefits Territorial diagnosis followed by diversified interventions and decentralised arrangements (technologies, infrastructure, and institutions)
c. Imperatives (appropriate responses)	<ul style="list-style-type: none"> Small-scale, interlinked diversified production/consumption activities: temporally and/or spatially differentiated activities for better use of the environment Location-specific, integrated, multiple activities with a focus on performance of total production system
C. Limited accessibility	
a. Product of	<ul style="list-style-type: none"> Slope, altitude, terrain conditions, seasonal hazards, and so forth (and lack of prior investment to overcome these factors)
b. Manifestations and implications	<ul style="list-style-type: none"> Isolation, remoteness or semi-closeness, poor mobility High cost of mobility, infrastructural logistics, support systems, and production/exchange activities Limited access to, and dependability on, external support (products, inputs, resources) Detrimental to harnessing niche opportunities and gains from trade; invisibility of problems/potentials to policymakers Local resource centred, diversified production/consumption activities
c. Imperatives (appropriate responses)	<ul style="list-style-type: none"> Local resource regeneration, protection, regulated use, recycling Focus on low-weight/low volume and high value products for trade Select nature and scale of operations appropriate to the degree of mobility and local resource availability Development interventions with a focus on decentralisation and local participation: improvement in accessibility with sensitivity to other mountain conditions (e.g., fragility), changed development norms and investment yardsticks
D. Fragility and marginality	
a. Product of	<ul style="list-style-type: none"> Combined effects of slope/altitude, and geologic, edaphic, and biotic factors; biophysical constraints create socioeconomic marginality
b. Manifestations and implications	<ul style="list-style-type: none"> Resources highly vulnerable to rapid degradation, unsuited to high intensity/productivity uses: low carrying capacity, low input absorption Limited, low productivity, high risk production options: little surplus generation or reinvestment High overhead cost of resource use: obstacles to infrastructural development, under-investment, subsistence orientation of economy People's low resource capacity preventing use of high cost, high productivity options; disregarded by 'mainstream' societies
c. Imperatives (appropriate responses)	<ul style="list-style-type: none"> Resource upgrading and usage regulation (e.g., by terracing), community sanctions Diversification involving a mix of high and low intensity land uses, a mix of production and conservation measures, low cost, local resource use Local resource regeneration, recycling, regulated use, dependence on nature's regenerative processes, and collective measures Different norms for investment to take care of high overhead costs

Source: Adapted from Jodha 1992

1983; Whiteman 1988; Sanwal 1989; Mulk 1992). Good practices and success stories related to agricultural and rural development have been identified and promoted with the help of this framework. It is a strong analytical concept that continues to lead mainstream discussion on mountain systems. Only recently, the World Bank referred to the mountain specific framework to formulate a vulnerability model for mountain areas (Brodnig and Prasad 2009). This mountain specific approach was used as a basis for developing the mountain specific value chain (VC) framework presented in this paper.

Rationale for Using the Value Chain Approach to Improve Mountain Livelihoods

Continuously changing global socioeconomic and environmental dimensions call for better ways for mountain people to engage with markets and react to the changing context. Production in the Hindu Kush-Himalayas suffers from a multitude of constraints that impede mountain people in adequately benefiting from the products or services they provide. Among others, the lack of clearly defined property rights, poor access to resources and markets, and the dearth of capacities and information prevent mountain people from increasing the benefits they receive. Markets are often secretive and disorganised, and small producers and service providers lack the capacity to actively interact and negotiate with more experienced downstream market actors. Most mountain production is based on agriculture or the NTFP sector. Products are mainly sold unprocessed, as mountain collectors and producers rarely add value. Tourism has high potential in the HKH, nevertheless tourism products are poorly developed and benefits at the local level are disproportionately low. Mountain value chain stakeholders generally only receive a meagre share of the value of the final product or service.

Environmental concerns further aggravate this reality. In the case of the fast growing NTFP sector (both nationally and regionally), large-scale extraction to increase gains through volume leads to environmental degradation. Despite the importance of natural resources for the long-term livelihoods of mountain people and for their own consumption, there are few policies in place or operationalised to help safeguard these resources.

The value chain approach has some distinct advantages for addressing the above challenges and improving mountain production when compared to other sector or supply chain analysis tools. Although the approach was originally devised as a business tool to optimise production within an enterprise, in the last two decades it has been instrumentalised by the development sector to help understanding of why developing countries benefit so little from global value chains, compared to industrialised countries. The approach has been refined and diversified several times and has evolved into a development tool that has received much attention from both development workers and policymakers in the last decade. International development agencies, non-government organisations (NGOs), UN agencies, and the World Bank are making increasing use of value chain analysis for policy development and programme design.

In practice, value chain analysis is only one of a number of different instruments used to understand production systems. Some authors do not differentiate conceptually between supply chains, production chains, or commodity chains, although each approach has, to a certain extent, a different focus, and there are many overlaps and little consensus on a specific definition. Relevant to the formation of the currently-practised value chain approach are the early works of Hirschman (1958) on backward and forward linkages; the concept of sub-sector analysis, supply chain management, and the filiere approach of the 1960s and 1970s; Michael Porter's (1987) value chain perception with its focus on how value is added within an enterprise; and, finally, the concept of a global value chain or global commodity chain (Gereffi and Korzeniewicz 1994; Gereffi et al. 2003), which aims to understand processes of globalisation and why the benefits of economic integration fail to reach developing countries and their poor.

The value chain approach can be instrumentalised to promote inclusive economic growth as it allows the identification of specific leverage points along a chain, be it upstream or downstream, which, if addressed, increase returns biased towards poorer and small producers, traders, or processors. Upstream value chain actors are typically the small producers, traders, or processors who are close to the origin of the product or service. Downstream value chain actors are typically the larger traders and processors who are closer to the end market. The approach of addressing specific leverage points is contrary to widespread development practices, which emphasise all efforts at the upstream level per se, thereby ignoring the fact that interventions elsewhere along the chain may lead to significantly higher benefits for pro-poor growth. The value chain approach overcomes this deficit and is, hence, a prime instrument for supporting sustainable livelihood development through high value products and services in mountain areas.

However, the economic and socio-environmental imperatives summarised in Table 1 must be taken into full consideration in order to improve production and benefits in mountain areas. It is not sufficient to understand only the production and market

side, or only the poverty and environmental dimensions. The advanced value chain approach offers an opportunity to analyse product and service sectors from producer to consumer, while at the same time recognising the importance of integrating poverty, gender, and environmental analysis. By combining both market economic and socio-environmental dimensions, the approach represents a combination of market and sustainable livelihood approaches. The Danish Institute for International Studies (DIIS) was one of the first to combine both vertical value chain analysis with horizontal dimensions, thus presenting a holistic instrument for addressing the systemic determinants of undeveloped production potentials (Bolwig et al. 2008).

The pro-poor bias and crosscutting perspective of the value chain approach makes it particularly significant for mountain development, as production and socio-environmental imperatives are closely integrated. Thus, value chain analysis enables us to identify value chains that have particularly high potential to benefit both mountain communities and their environment, to analyse actors in existing chains that reap the greatest or smallest benefits, to understand why this is the case, and to formulate feasible strategies to positively discriminate returns for the benefit of mountain people.

Need for an Adapted Value Chain Approach

In recent years, the value chain approach has attracted the attention of development planners and policymakers for mountain areas. Intensive governmental consultations by ICIMOD and its eight regional member countries pointed to the value chain approach as an appropriate means of addressing persisting development problems in mountain areas. The value chain approach offers a way of working towards equitable and sustainable participation of mountain producers and service providers in increasingly globalised markets as it provides a framework for identifying leverage points that can be addressed to increase the economic return to producers, thus supporting pro-poor and inclusive economic growth. Several development agencies and government organisations like International Fund for Agriculture and Development (IFAD), German Technical Cooperation (GTZ), and Netherlands Development Organisation (SNV) have started to use the value chain approach to tackle poverty reduction and sustainable livelihoods in mountains. Mountain value chains, however, pose numerous challenges. Producers and service providers are often marginalised, with little involvement or knowledge of distant market mechanisms. The mountain context in which they produce or provide services is challenging in terms of production capacity and environmental fragility. Mountain value chains are long and transportation is costly, thus the advantages inherent in HKH mountain products and services remain largely unexplored.

The generic value chain approach urgently requires sensible adaptation to the imperatives of the mountain context. In most value chain development projects in mountains, the mountain perspective is missing, or there is a mismatch between the attributes of value chain strategies and the imperatives of specific mountain conditions. This mismatch explains the ineffectiveness of often well-intended development efforts in mountain areas. The generic value chain approach shows little understanding of the economic and political processes, contextual factors, and social relations of mountain systems, which greatly shape the ways in which interventions function. This mismatch between the imperatives of mountain conditions and the characteristics of conventional value chain development have several negative side effects, which can lead to a 'paradox of progress' in mountain areas (Jodha and Shrestha 1994). Mountain areas require situation-specific and positively discriminating development measures and, hence, a value chain approach that is responsive to the opportunities and challenges inherent in mountain value chains.

Adapting the Value Chain Approach to the Mountain Context

Although the generic value chain approach is already being used in projects in mountain areas, this publication presents the first attempt to adapt the approach to the mountain context. The procedure for adapting the generic approach is based on applied research and analysis at the regional level. Selected value chains from the Hindu Kush-Himalayan region were analysed to identify the relevant characteristics of mountain value chains. Strategies to address shortcomings, with an explicit emphasis on pro-poor objectives and environmental sustainability, were formulated to develop value chain strategies that leverage or neutralise the imperatives of the mountain context.

A regional programme of six value chain pilot projects was implemented in different parts of the Hindu Kush-Himalayan region to analyse mountain characteristics and test development strategies for their ability to use the advantages of, and counter the disadvantages of, mountain specificities. In total, almost 20 different product and service based value chains were reviewed. ICIMOD's regional mandate puts it in a unique position to facilitate cross-country and cross-pilot experience

gathering and sharing. Building on ICIMOD's mandate as a regional knowledge broker, the learning from these regional and transboundary value chain pilot projects was matched with the findings of international research and analysed in order to advance the adaptation of the generic value chain approach to the HKH mountain context. Regional member countries that could not pilot value chain projects were also integrated into the knowledge sharing process. The following pilot studies were central to the development of this framework:

- Bay leaf (*Cinnamomum tamala*) value chain development in Nepal and Uttarakhand, India
- Agricultural and non-timber forest product (NTFP) value chain development in North East India and the Far West Development Region of Nepal.
- Tourism, NTFP, and oranges value chain development in Nepal and North India.
- Mushroom, bio-briquette, and beekeeping value chain development in Bangladesh's Chittagong Hill Tracts (CHT)
- Beekeeping value chain development in Afghanistan, Bangladesh, China (as knowledge hub), India, Nepal, and Pakistan
- Horizontal upgrading activities in medicinal and aromatic plants in Nepal, Bangladesh, and Bhutan

Together, these pilot studies cover nearly the whole Hindu Kush-Himalayan mountain system (see Figure 1).

A strategic pro-poor and sustainable value chain framework for mountain areas was developed based on the practical experience and analysis of the regional value chain pilot studies and the literature review. The specificities of mountain value chains and the imperatives of the mountain context for value chain development were identified and analysed in order to adapt generic conceptual frameworks to the HKH environment. The effectiveness of selected value chain interventions for poverty reduction and environmental sustainability were observed and compared at the regional level. Reflections revolved around the examination of vertical elements such as value chain structures, actors, dynamics, the functional division of labour and value addition, and the structure of rewards and governance. To achieve a sustainable pro-poor framework, horizontal value chain elements such as poverty, gender, labour, and the environment were considered in their respective complexity.

Figure 1: Location of activities in the six regional value chain pilot studies



On the basis of this analytical work, generic value chain frameworks were reviewed and adapted to provide a step-by-step approach to guide programme design and implementation to develop mountain value chains. The mountain specific value chain framework that was developed is a combination of conceptual, analytical thinking and a strategic, practical, and operational tool, making it a coherent methodology.

Throughout the design of this strategic framework, external actors were continually invited to review and improve the work in progress. Two mountain value chain experience sharing events involving pilot-project partners and external value chain actors were organised in January and February 2009. Learning and reflections were fed back into the ongoing value chain pilots to alter and improve their implementation.