

Integrated Value Chain Development as a Tool for Poverty Alleviation in Rural Mountain Areas

An analytical and strategic framework

ICIMOD

FOR MOUNTAINS AND PEOPLE

Integrated Value Chain Development as a Tool for Poverty Alleviation in Rural Mountain Areas

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Executive Summary

Value chains in mountains are different from those in plains areas and require a different interpretation. Mountain value chains are influenced by a set of mountain specificities which provide comparative advantages, but at the same time present challenges in reaping the higher returns. These specificities, such as the availability of unique and niche products and services, limited accessibility, fragility, diversity, and marginality, have a strong impact on value chain analysis and the selection of value chain development options. The value chain approach has already been implemented in mountain areas, but with a lack of contextualisation to the mountain environment. The generic value chain framework lacks understanding of the socioeconomic and environmental imperatives of mountains, which greatly shape the ways in which interventions function. The disregard of mountain specificities makes value chain interventions less successful and can expose mountain communities to even more vulnerability. Hence, there is a pressing need to adapt the generic value chain approach to the mountain specific context.

The majority of the people of the Hindu Kush-Himalayas (HKH) depend on subsistence agriculture and natural resources for their livelihood. About 90 per cent of the farmers in mountain areas depend on marginal and small landholdings, where they typically cultivate less than one hectare per household. In many cases, they augment their income by using other natural resources, which provide additional food and services. The great diversity afforded by high mountain conditions (biodiversity, climate, topography, culture) gives these areas a comparative advantage in the production of a variety of 'niche products' for their own and lowland consumption. However, in the Hindu Kush-Himalayan region, collection, processing, and marketing processes suffer from a multitude of problems, which in most cases prevent mountain people from benefiting adequately from the resources they are endowed with. Markets are often secretive and disorganised, and small producers and service providers lack the capacity to interact actively and negotiate with more experienced buyers and traders. Most mountain production is based on agriculture or non-timber forest products (NTFPs), and products are sold in their unprocessed form. The same holds true for service value chains, such as tourism, for which the full potential for poverty reduction has so far been unrealised. A lack of value chain coordination, weak institutional and policy support, and the limited market capacities of mountain producers and service providers, cause 'leakages' of locally generated income. Local value addition is rare, and mountain value chain stakeholders receive a meagre share of the value of the final product or service. Much of the benefit accrues to people and places far away.

The value chain approach offers a way of addressing these deficiencies. It has the potential to highlight pathways for inclusive economic growth by identifying leverage points along the chain, be it upstream or downstream, which, if addressed, yield the highest positive outcome for small producers, traders, and processors. But the approach requires adaptation for mountain areas if it is to be successful.

Mountain economies have common opportunities and challenges derived from the unique mountain characteristics. The structure and functioning of these characteristics were identified in the course of a series of value chain development pilots conducted by ICIMOD and its partners across the HKH region. In total, almost 20 different product and service based value chains were piloted and reviewed. Based on these pilots, a strategic framework for pro-poor value chain development in mountain areas was developed. The specificities of mountain value chains and the imperatives of the mountain context for value chain development were identified and analysed as a basis for adapting the generic value chain conceptual framework to the HKH environment. Field learning was compared with current literature to ensure all aspects were covered and identify the most suitable value chain framework. This learning was shared in several events and the resultant framework presented to an external panel of experts for finalisation.

This publication presents the results of this process: i.e., an analytical and strategic framework for value chain development in the HKH mountain areas. The first part looks at the need to adapt the generic value chain framework to the mountain context, and examines the mountain specificities (unique/niche production, limited accessibility, fragility, marginality, and diversity). The adapted framework provides an opportunity to better comprehend and reflect upon the specificities of mountain value chains. It is crucial to have an understanding of the magnitude and integrated aspects of the mountain specificities of value chains in order to select the right chain to develop, and the right strategic focus, to actually achieve an improvement for mountain stakeholders. The second part looks at the analytical and strategic framework for value chain development in the mountains, presents various case studies from the value chain pilots, and provides guiding questions for practitioners. The specific value chain strategies for mountains are elaborated and prioritised according to prevailing mountain specificities. The regional value chain pilots identified these strategies as particularly relevant when working for improved and sustainable returns to poor mountain producers and service providers. Together, Parts I and II offer an orientation to, and decision-making aid for, the design and implementation of value chain development projects in mountain and hill areas.

This framework will support the informed decision making of mountain communities and regional stakeholders from the public, private, and civil sectors in developing value chain strategies that leverage or neutralise the imperatives of the mountain context. The mountain specific value chain framework lays the ground for new regional programmes and scaling up initiatives by regional and international partner organisations, development organisations, and government institutions. In the changing socioeconomic and environmental context, which has strong consequences for HKH communities, this informed and contextualised approach to improving mountain livelihoods can have direct benefits for mountain people.

Five take home messages

1. Value chain analysis and development can be a significant tool for poverty reduction, particularly for mountain areas. Firstly, mountain communities' profitable participation in value chains is weak and can be improved rapidly through functional and process upgrading. Secondly, mountain products and services offer substantial potential for niche and unique marketing by product diversification at the upstream level.
2. Mountain value chains require a specific contextual analysis, as mountain products and services are impacted by mountain specificities such as poor accessibility, marginality, fragility, and diversity. Hence, an adapted value chain approach is required for mountain areas.
3. Interventions in mountain value chains are interventions in an interrelated and fragile environmental and social system. Mountain people are closely interwoven with, and dependent on, their diverse natural environment. Interventions need to follow an integrated approach that reflects upon the effect of each action on the mountain system, be it economic, social, or environmental.
4. Selection of the right value chain is one of the most important steps. It requires not only a thorough analysis of the chain, but also an in-depth understanding of the wider mountain context to determine whether or not the intervention is sustainable in the long term. One must first understand what the mountain specific challenges of a selected chain are in order to select the right mix of mountain specific strategies to address them.
5. A significant difference between mountain value chains and other value chains is the heterogeneous and scattered nature of production in mountains areas, which results in difficulties in realising economies of scale. Hence, a central strategy is to focus on a basket of products or services that can be supplied along the same market chain (economies of scope), rather than on the development of one single product or service.

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Part I

Value chains for mountain regions

This section looks at the need to adapt the generic value chain framework to the mountain context, and examines the mountain specificities (unique/niche production, limited accessibility, fragility, marginality, and diversity). The adapted framework provides an opportunity to better comprehend and reflect upon the specificities of mountain value chains. It is crucial to have an understanding of the magnitude and integrated aspects of the mountain specificities of value chains in order to select the right chain to develop, and the right strategic focus, to actually achieve an improvement for mountain stakeholders.



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

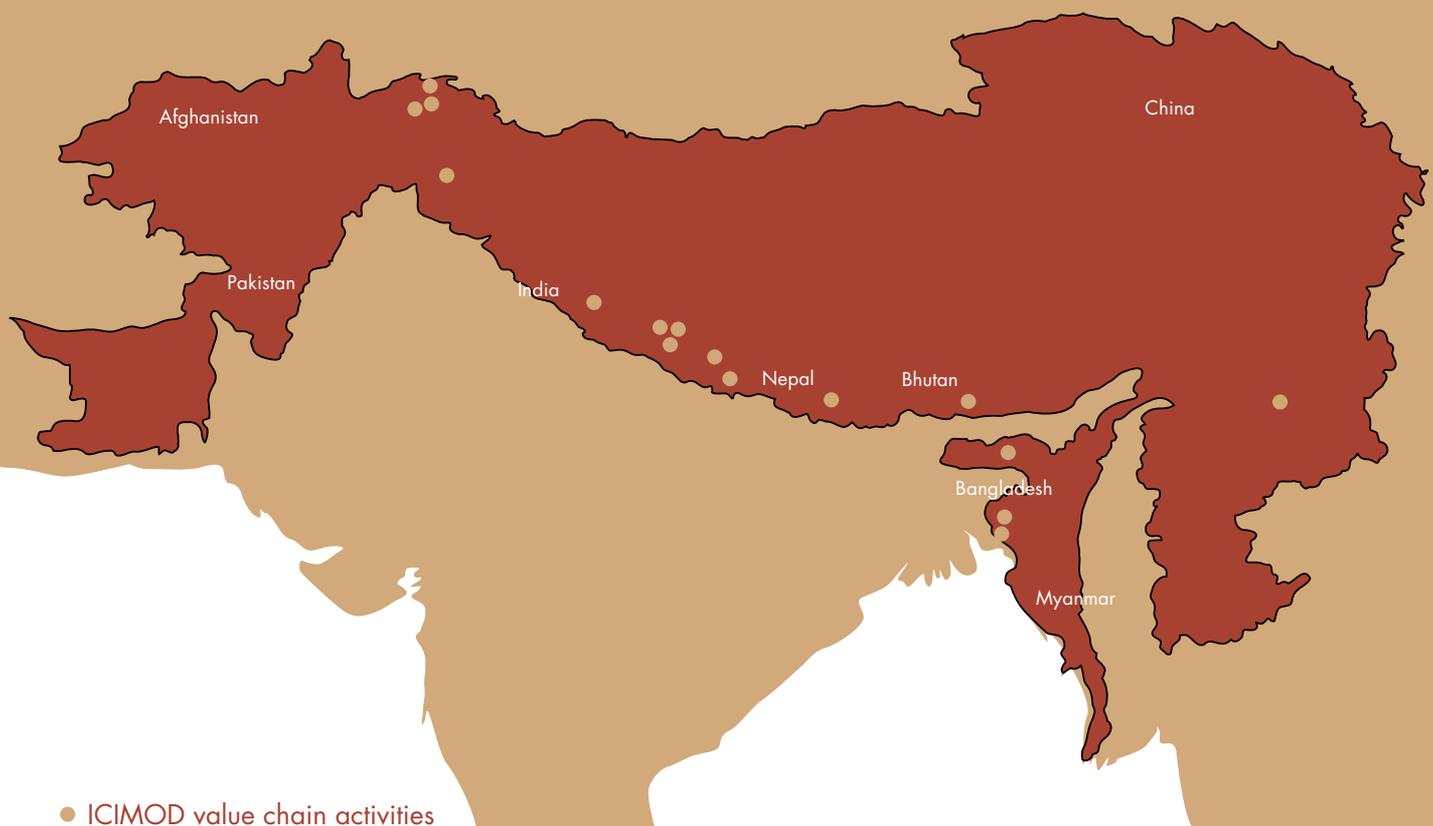
gathering and sharing. Building on ICIMOD's mandate as a regional knowledge broker, the learning from these regional and transboundary value chain pilot projects was matched with the findings of international research and analysed in order to advance the adaptation of the generic value chain approach 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.

Framework for Sustainable and Pro-poor Value Chain Development in Mountains

A framework for sustainable, pro-poor value chain development in mountains gives the necessary conceptual frame of reference for understanding the context in which value chain development in mountains takes place. In the following, this approach is developed based on the generic value chain model and taking the dimensions of sustainability and poverty into consideration.

The Generic Value Chain Approach

A value chain represents the full range of activities required to bring a product or service from conception, through the different phases of production and delivery, to the final consumer. The value chain approach is a heuristic, analytical, and strategic tool that provides a framework for identifying and examining a value chain's different actors, the dynamics of processing and value creation, reward and distribution, power relation structures, and knowledge transfer. The aim is to explore potential leverage points that will help in developing a systemic competitive value chain that enables inclusive and sustainable economic growth (Kaplinsky and Morris 2000).

The core of any value chain analysis is to first understand the input-output processes of the chain. Tracing the complete process means mapping all the actors, functions, and processes that are involved in bringing a product or service from production to consumption. The functions of the main actors are studied in more detail to understand how they add value to, and retain value in, the chain. A clear picture of the functions that the different actors perform allows, at a later stage, identification of which functions could be performed by other actors in the chain in a more efficient way.

Particularly for global value chains, it is crucial to understand the geography of the chain. This is relevant as companies are open to relocating their production, for example to other developing countries, in order to capture higher gains through access to lower labour costs, raw material, or new markets. Hence, "developing countries are under constant pressure to devise strategies to maintain their position in existing production networks or to upgrade to higher value-added segments of global value chains" (Gereffi and Christian 2009, p.4).

Once the basic process, functions, actors, and geography of the chain are mapped, the emphasis shifts to examining the governance structure of the chain. Governance analysis is a central aspect of value chain analysis and one of the core aspects that distinguishes the approach from others. It describes the power relations within a chain, which allow so-called 'lead firms' to allocate resources, influence the distribution of gains, and decide on the terms of chain membership (Gereffi and Korzeniewicz 1994; Kaplinsky and Morris 2000). These actors are able to exercise control over what type of product is supplied, in what quantity and quality, when, and at what price (Humphrey and Schmitz 2002). They have significant influence over how information and knowledge is shared and disseminated along the chain. In terms of governance types, it is observed that chains starting from developing countries are predominantly 'buyer-driven' and only exceptionally 'producer driven' (see more in Gereffi and Korzeniewicz 1994). This holds true for almost all value chains starting from the Hindu Kush-Himalayan region.

Finally, the analysis needs to incorporate the structure and influence of the institutional framework. Regulatory bodies, national or multilateral agencies, trade associations, unions, and governments all have substantial influence over how the value chain is structured and functions.

The aim of pro-poor value chain analysis is to identify leverage points along a chain which, if addressed, yield the highest potential for improving relative, or at least absolute, benefits for small producers, service providers, traders, or processors. Leverage points can indicate intervention potential for various value chain development options. Value chain development is herein defined as a positive or desirable change in chain participation that enhances rewards, reduces exposure to risks, or balances conservation with the use of natural resources at the production level. Different options for value chain development, both in terms of upgrading and downgrading strategies, are feasible.

Upgrading is the most known and used value chain development option. Upgrading is similar to innovation, but advanced in the sense that it refers to innovation in the relative context, i.e., innovation must have a competitive edge compared to the rate of innovation of competitors (Kaplinsky and Morris 2000). Different upgrading trajectories exist. Approaches that are particularly relevant for improving the participation and revenue of small mountain producers include (i) process upgrading (to organise productive activities more efficiently within individual links in the chain and between links in the chain); (ii) product upgrading (to achieve higher prices through improved quality or quantity, value addition, standards, or certification); (iii) functional upgrading (to acquire new functions and, hence, higher margins, which were previously functions of forward chain actors); (iv) integration through vertical or horizontal integration¹, contracts between actors in the value chain, or linkages (to bring stability, transparency, and efficiency to the long rural to urban value chain linkages of mountain products and services); (v) market upgrading (to identify new or untapped consumers, as well as to improve access to already existing markets). The first three of these are defined in Humphrey and Schmitz (2002) who also defined a fourth: inter-chain upgrading (applying competences acquired in one function of a chain to a different sector/chain).

Functional downgrading, i.e., downwards movements in the value chain structure, takes place when processing or other downstream functions are stopped to focus on core upstream activities. Small producers, traders, processors, or service providers may be better off if they shed some activities to focus on core activities. By concentrating on fewer activities, they may be able to achieve higher net returns or lower their vulnerability (see Bolwig et al. 2008 for a discussion of the different notions of upgrading).

Adding a Sustainable, Pro-poor Dimension

Originally, the value chain approach focused on the analysis of the vertical business dimensions of a chain. For a long time, it was not an appropriate instrument for broader development programmes, which aimed to strike a balance between economic growth, poverty reduction, and environmental protection. More recent value chain concepts also integrate horizontal elements into chain analysis and development. This new stream of research reasoned that if the value chain approach was to serve a development purpose, the analysis of poverty, gender, and environmental dimensions within, and at the boundaries of, a chain is equally important.

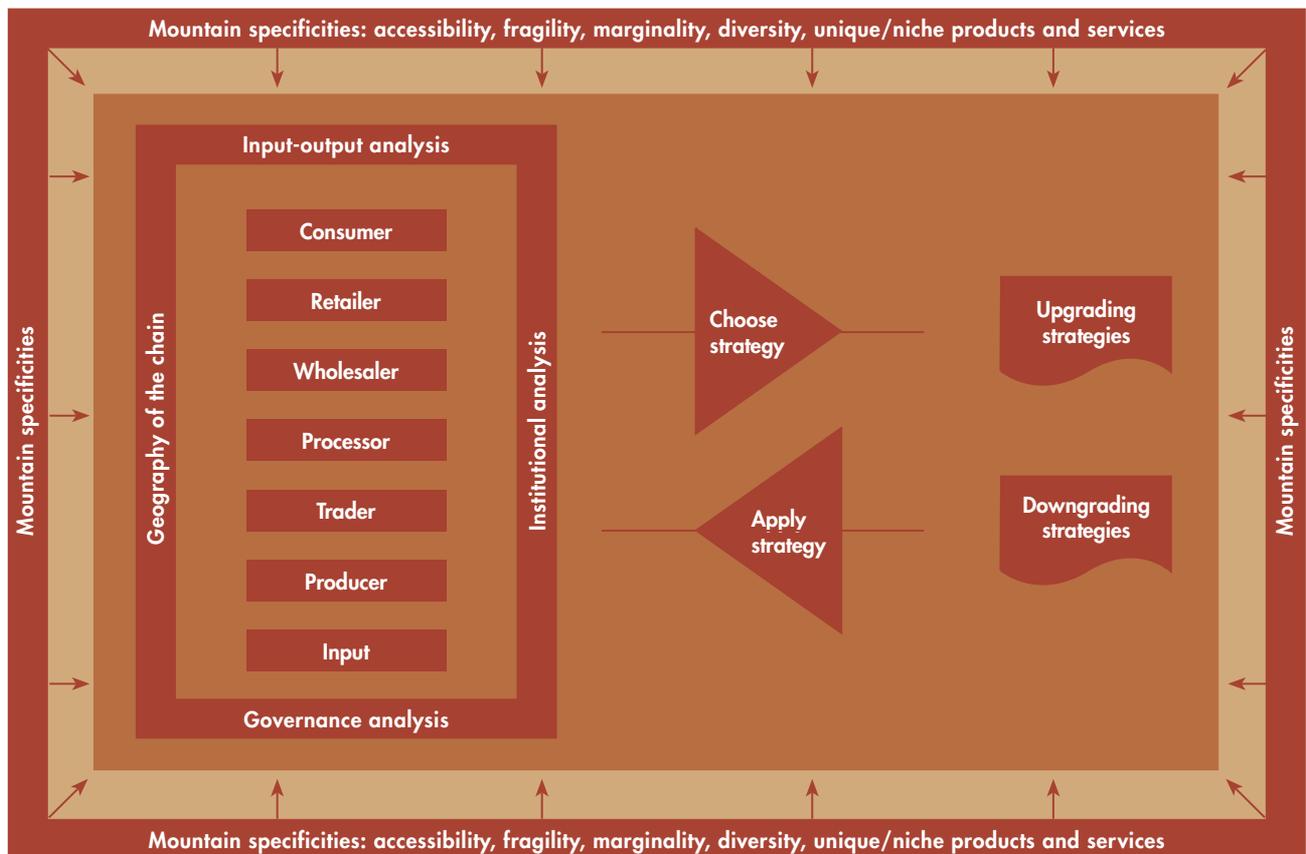
These horizontal elements need to be added to the previous 'stand-alone' value chain approach, which did not have a primary emphasis on pro-poor analysis. DIIS was one of the first institutes to approach these challenges analytically. It introduced a conceptual framework that enables consideration of poverty, gender, labour, and environmental dimensions in the value chain analysis, and thus integrates the 'vertical' and 'horizontal' aspects of value chains that affect poverty and sustainability (see Bolwig et al. 2008). The integration of poverty considerations into value chain analysis significantly broadens the range of issues that need to be examined when exploring issues in value chain governance and restructuring. These horizontal dimensions are necessary to gain a complete picture of the context in which mountain producers act and in order to be able to identify leverage points along the chain that improve the benefits to poor mountain value chain stakeholders in a sustainable way. It is crucial for any intervention to identify a balance between poverty reduction, environmental protection, and economic growth.

The Mountain Specific Value Chain Dimension

Value chains in mountains are different and therefore require a differentiated interpretation. Mountain value chains are influenced by a set of mountain specificities to which they owe their comparative advantages, but which also present challenges to reaping higher returns. Mountain specificities, such as the availability of unique and niche products and services, accessibility, fragility, diversity, and marginality, have a strong impact on value chain analysis and on the selection of value chain development strategies. Figure 2 shows the basic value chain framework set within mountain specific conditions.

¹ Vertical integration describes the situation where one actor performs multiple chain activities. This can be in the form of forward vertical integration (i.e., when a chain actor adds additional value to the product) or contractual agreements with buyers that can support producer-trader linkages.

Figure 2: The mountain specific value chain framework



Unique and niche production

Due to their specific environmental and resource-related features, mountains have unique and niche products and services that provide them with comparative advantages over plains areas, even though production is generally unable to compete in terms of large-scale agricultural production. The comparative advantage results from high mountain conditions such as biodiversity, climate, topography, culture, and landscape. For example, certain valleys provide a habitat for special medicinal plants, and some mountains are a source of unique services or products such as mountain tourism or certain agricultural products.

There is substantial scope for generating more income locally by supporting mountain people to promote and harness unique and niche products and services. In fact, niche or comparative advantages remain largely dormant in mountain areas unless circumstances are created to harness them. The focused commercial and sustainable harnessing of high value products and services presents a significant opportunity for mountain communities to generate employment and income by using the natural resource endowment and comparative advantages of the Himalayan ecosystem.

Accessibility

The accessibility of mountain systems is a crucial determinant of the performance of mountain value chains. The remoteness and isolation of mountain systems is directly related to the potential of unexplored niche and unique products. Particularly for tourism products, the wilderness and untouched characteristics of remote mountain areas are highly attractive. However, the high transportation and transaction costs, low mobility and accessibility, and often insufficient quality and quantity, means that most products and services available in mountain areas remain uncompetitive compared to those in more accessible areas.

Distances to markets are long and transportation costs high, in part as a result of wear and tear of the means of transport. The steep slopes and high risk of natural hazards such as landslides mean that transportation, if any, can be obstructed for weeks. The maintenance of mountain roads is a costly exercise. Thus establishing market links is difficult, expensive, and, ultimately,

uncompetitive. Further, mountain value chains are long and particularly the segment from producer or service provider, via trader to processor or agent in the plains is characterised not only by physical obstructions, but by a multitude of different actors each with vested interests. This often means that chains are not transparent and are badly coordinated. Fiscal burdens add to the generally insufficient infrastructure and increase transaction costs to unprofitable levels for many mountain products.

The provision of infrastructure and supportive institutions is a pre-requisite for the successful integration of mountain economies into modern markets. However, infrastructure development is beyond the scope of most value chain development projects, and other strategic means need to compensate as far as possible for the constraints of physical inaccessibility.

Environmental fragility and conservation

The fragility of mountain resources, which refers particularly to low carrying capacity, poses challenges in meeting market demands in terms of volume, quality, and environmental sustainability. Agriculture is the dominant user of natural resources in the mountains, thus, the performance and sustainability of mountain agriculture is determined by the pace and pattern of resource use systems and associated technological and institutional measures. A sustainable and productive agricultural model in the mountains and hills requires a production system that ensures the stable flow of products and services without degrading or depleting the long-term potential of the environmental resources of mountain agriculture (Jodha 1991).

Marginalised mountain communities

In line with the remoteness and isolation of mountain systems, mountain communities remained widely marginalised. For service value chains, such as tourism, this marginalisation represents a major niche element in the form of a uniquely preserved traditional and subsistence-oriented way of life with vast cultural variety. Further, the depth of traditional knowledge for livelihood and adaptation mechanisms is as yet little explored and is receiving increasing attention in relation to the discussion on climate change adaptation (e.g., traditional knowledge on tolerant seed value chains).

Nevertheless, the marginalisation of mountain communities currently represents one of the major challenges in pro-poor value chain development and is, therefore, a prime focus for interventions. Because of the persistent lack of connectivity and market links, rural mountain people have remained primarily subsistence oriented. Weak human capital poses challenges in establishing market links as mountain people lack market knowledge, and production, marketing, and negotiating skills. A powerless voice means that the demands of mountain people for equitable market integration are unheard by mainstream decision makers. Mountain people are highly averse to cutting down their self-sufficiency in food production, as during times of food shortage the outside supply is not reliable or accessible, and there is sometimes a lack of purchasing power.

It is argued that the focus on subsidies, charity, and paternalistic measures, disregarding local potentials, concerns, and capacities, has increased the dependence of mountain communities on external support (Jodha and Shrestha 1994). Inaccessibility definitely imparts a certain invisibility and makes it easier to push aside the integration of mountain communities into mainstream development. Most developing countries with underdeveloped mountain areas also face considerable development problems in more accessible areas, which are easier to address and promise greater impact and visibility. To decrease the marginalisation of mountain communities through value chain development, the focus has to be long-term and concentrated on awareness raising on market mechanisms and capacity building to enable mountain people to engage with markets.

Diversity

There is an immense variation among and within eco-zones in mountain areas. Different factors, such as elevation, altitude, geologic conditions, steepness and orientation of slopes, wind and precipitation, and mountain mass and relief, lead to an extreme degree of heterogeneity, not only of mountain products, but also of mountain people and their cultures. This high natural and biological diversity offers interesting opportunities if value chains are steered correctly, particularly for the NTFP and tourism sectors. Economies of scale, i.e., reducing the average cost per unit by increasing the number of units produced, are a preferred instrument for value chain development in more accessible, homogenous areas. However, for mountain areas with high diversity, different concepts, such as economies of scope, i.e., increasing cost-efficiency by producing two or more different products together rather than separately, need to be considered.

Part II

Analytical and strategic framework

This section describes an analytical and strategic framework for sustainable and pro-poor value chain development in mountain areas. The first part presents an analytical framework which can be used to gain a greater understanding and comprehension of the mountain specificity of value chains. The second part discusses specific value chain strategies, which are prioritised according to mountain specificities. Regional pilots proved that these strategies are particularly relevant when working for improved and sustainable returns to poor mountain producers or service providers. The final part presents practical guiding questions for value chain development practitioners with reference to these strategies. Together, these sections offer an orientation and decision-making aid for the design and implementation of value chain development projects in mountain areas based on thorough regional experience and analysis towards pro-poor mountain value chains.



Analytical Framework for Pro-poor Mountain Value Chains

The following analytical framework provides a way of improving understanding and comprehension of the mountain specificity of mountain value chains. It is crucial to understand the magnitude and integrated aspect of the mountain specificities of value chains in order to select the right chain and the right strategic focus.

Understanding the Level of Mountain Specificity of Mountain Value Chains

The mountain specific value chain framework (Figure 2) names five major mountain imperatives: unique/niche production; inaccessibility, fragility, marginality, and diversity. These are further clarified in Table 2, which summarises the main manifestation criteria of each. The level of mountain specificity of a value chain can be measured or rated by comparing with these criteria.

By rating mountain value chains using these criteria, it is possible to obtain a higher degree of clarity of the extent and individual dimensions of mountain specificities, which assists in choosing the right value chain and prioritising strategic interventions.

Table 2: Rating mountain specificities by their core manifestation criteria

Mountain specificity	Core manifestation criteria
Pro-poor growth opportunity through unique/niche products or services	<ul style="list-style-type: none"> • Presence of unique/niche products or services due to highly location specific diversity (in the form of products, culture, or knowledge) • Equitable participation of poor/disadvantaged groups as producers or labourers • Potential for pro-poor income increase • Existence of backward linkages (in terms of both investment and knowledge transfer)
Poor accessibility	<ul style="list-style-type: none"> • Remoteness • Distance to markets • Efficiency of infrastructure • Weight/volume of products • Availability of communication infrastructure
Fragility	<ul style="list-style-type: none"> • Vulnerability to irreversible damage • Carrying capacity • Ability to resist drought
Marginality	<ul style="list-style-type: none"> • Linked to mainstream markets • Capacity to understand/ fulfil market demands • Negotiation capacity • Ability to bear with market risks
Diversity	<ul style="list-style-type: none"> • Potential for economies of scope through diversified but interlinked activities

Source: Adapted from Jodha 1992

Choosing the Right Value Chain by Examining its Mountain Specificities

The first step in the value chain approach is to select the value chain to be optimised. Value chain manuals usually offer a set of generic questions to guide this selection process. However, in a mountain context, this process needs to be enhanced by reflection upon the mountain specificity of the potential chain. The mountain specificities and their core manifestation criteria (Table 2) offer a frame for this reflection process and guide the selection of the right value chain for the particular mountain context.

The mountain specificities are examined for each potential value chain by rating their respective core manifestation criteria. The rating is done by project staff using their subjective interpretation and comparing the different value chain criteria. A scale from +3 (very good) to -3 (not very good) is suggested. The mean of the core manifestations indicates the intensity of the positive or challenging elements of the respective mountain specificity. Table 3 shows an example. In one of the Hindu Kush-Himalayan value chain pilots in the uplands of Mid-Western Nepal, four products were pre-selected according to generic value chain criteria and suggested for value chain development. These four potential value chains were then examined according to their mountain specificities with the results shown in the Table.

The reflection process presented in Table 3 for each potential value chain enhances awareness of the relevance and integrated dimensions of mountain specificities. It gives a fair understanding of the strength of opportunities and challenges inherent in mountain specificities. Most importantly, by looking at individual criteria, implementers can see what the strong impediments are to the materialisation of pro-poor opportunities and whether or not the project has the means (in terms of time, human, and financial resources) to address these impediments.

Figure 3 presents the decision-making process to choose the right value chain in a graphical way. Most Hindu Kush-Himalayan value chains, indeed all the pilots, fit in the upper right-hand corner (high level of opportunities/uniqueness, but high level of mountain specific challenges/constraints). This is a typical scenario for promising high mountain value chains, and the use of mountain specific value chain strategies is pivotal to successful value chain development. The lower right-hand

Figure 3: Analytical frame to support value chain (VC) selection and strategy identification

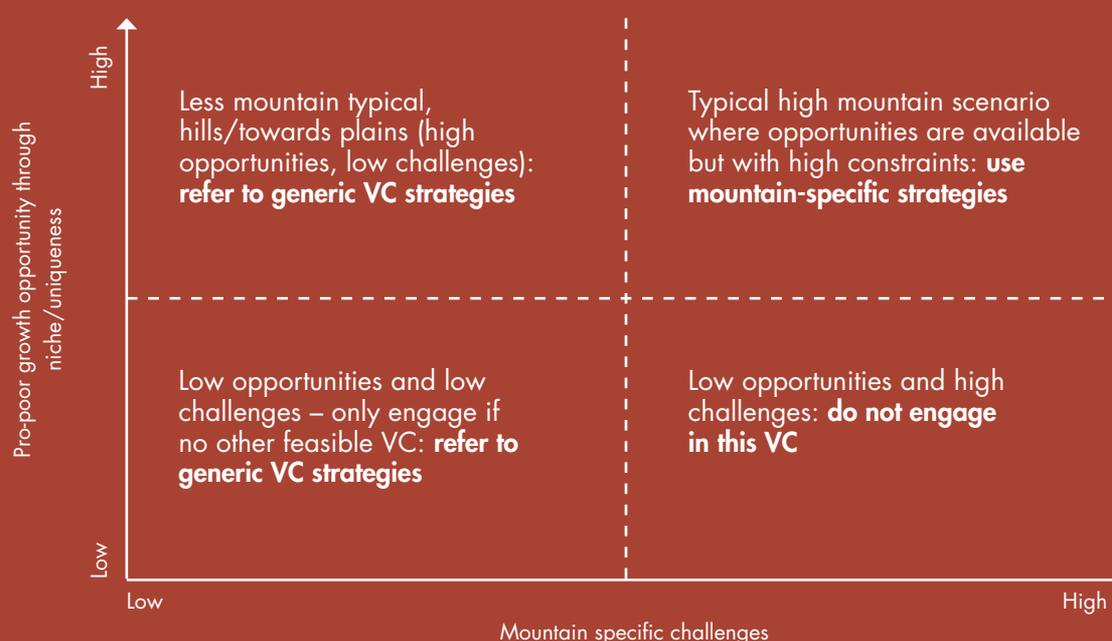


Table 3: Rating of mountain specificities for potential value chains in Mid-Western Nepal

	Potential value chain	Seabuckthorn	Lokta paper	Medicinal plants/herbs	Organic vegetables
	Criteria				
Pro-poor growth opportunity through niche/uniqueness	Uniqueness	+3	+1	+3	-1
	Participation of poor	+3	+3	+3	+1
	Pro-poor benefits	+2	+1	+2	+1
	Backward linkages	0	+1	0	+1
	Mean	+2	+1.5	+2	+0.5
Accessibility	Remoteness	-3	-2	-3	-2
	Distance to markets	-2	-2	-2	-2
	Infrastructure	-2	-2	-2	-2
	Weight/volume	+2	+3	+2	-2
	Communications	0	0	0	0
Mean	-1	-0.6	-1	-1.6	
Fragility	Vulnerable to irreversible damage	+2	0	-2	0
	Carrying capacity	+2	0	+1	-1
	Drought resistant/water dependent	+2	-2	0	-1
	Mean	+2	-0.7	-0.3	-0.7
Marginality	Linked to markets	-2	+1	-2	+1
	Communities market capacity	-2	-2	-2	+1
	Negotiating power	-3	-2	-2	0
	Ability to bear risk	-1	0	-1	-1
	Mean	-2	-0.75	-1.75	+1
Diversity	Potential for economies of scale	-2	+1	+2	0
	Diversified but interlinked activities (economies of scope)	+1	0	+2	+2
	Mean	-0.5	+0.5	+2	+1

^aSee Table 2 for description of criteria

corner, on the other hand, shows low opportunities, but high mountain specific challenges. In this case, it is highly advisable to reconsider the selection of this specific product or service as long-term economic sustainability is unrealistic.

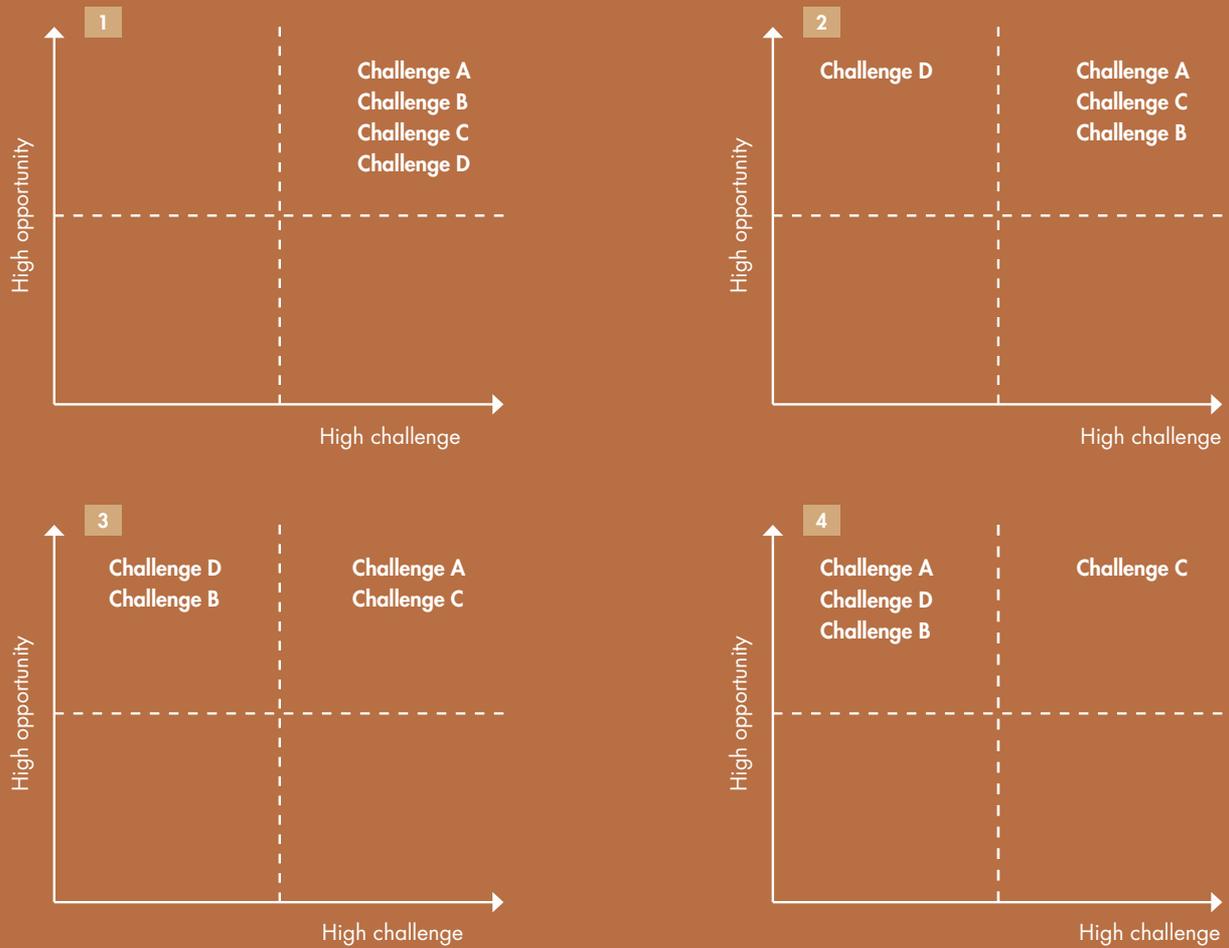
The best scenario is clearly the upper left corner with high profitability and low mountain challenges; however, this is rarely encountered in mountain areas. This scenario may be found in accessible hill areas with good linkages to rural-urban centres. Specific mountain value chain strategies are less necessary for this scenario as generic strategies are feasible. Finally, plots in the lower left corner are less representative of mountain value chains, and standard strategies are sufficient.

Setting the Strategic Focus According to Prevailing Mountain Specificities

Once a value chain has been selected, the strategic focus needs to be chosen in accordance with the prevailing mountain specificities. Based on the pilot projects, different constellations of mountain specificities became visible. The selection and prioritisation of strategies strongly depends on these respective dimensions and the interrelationship between mountain specific opportunities and challenges. Several scenarios, from the strong prevalence of one mountain specificity to a balance of all, are possible. Figure 4 presents some possible scenarios.

All scenarios describe and compare the intensity of the four mountain imperatives: inaccessibility (A), fragility (B), marginality (C), and diversity (D), expressed as challenges that must be overcome to realise an existing mountain opportunity. As described in the previous section, all challenges should be, and are, opposed to a high level of opportunity in the form of unique or niche products or services with high pro-poor growth potential. The lack of such a comparative and competitive

Figure 4: Possible scenarios of mountain specificities within a mountain value chain



advantage would seriously place in question the long-term profitability of any value chain intervention. Scenario 1 describes a typical high mountain reality: although high mountains offer products or services with high market potential, they generally also bring with them a full set of mountain constraints. The graph shows the strong intensity of all four challenges, and that a full set of integrated strategies that address mountain challenges as a whole is required. Scenarios 2 and 3 are also observed throughout the Hindu Kush-Himalayan region. They represent mountain value chains in which only two or three mountain constraints are particularly relevant. In these cases, the strategic focus is set to overcome prevailing challenges. In scenario 4, only one challenge is particularly intense. This scenario was rarely observed in the Hindu Kush-Himalayan pilots, but would make the strategic orientation easier as efforts can be focused on this individual challenge.

The next section presents a strategic framework with specific suggestions according to the particular mountain context based on this analysis of mountain value chains and their mountain specificities.

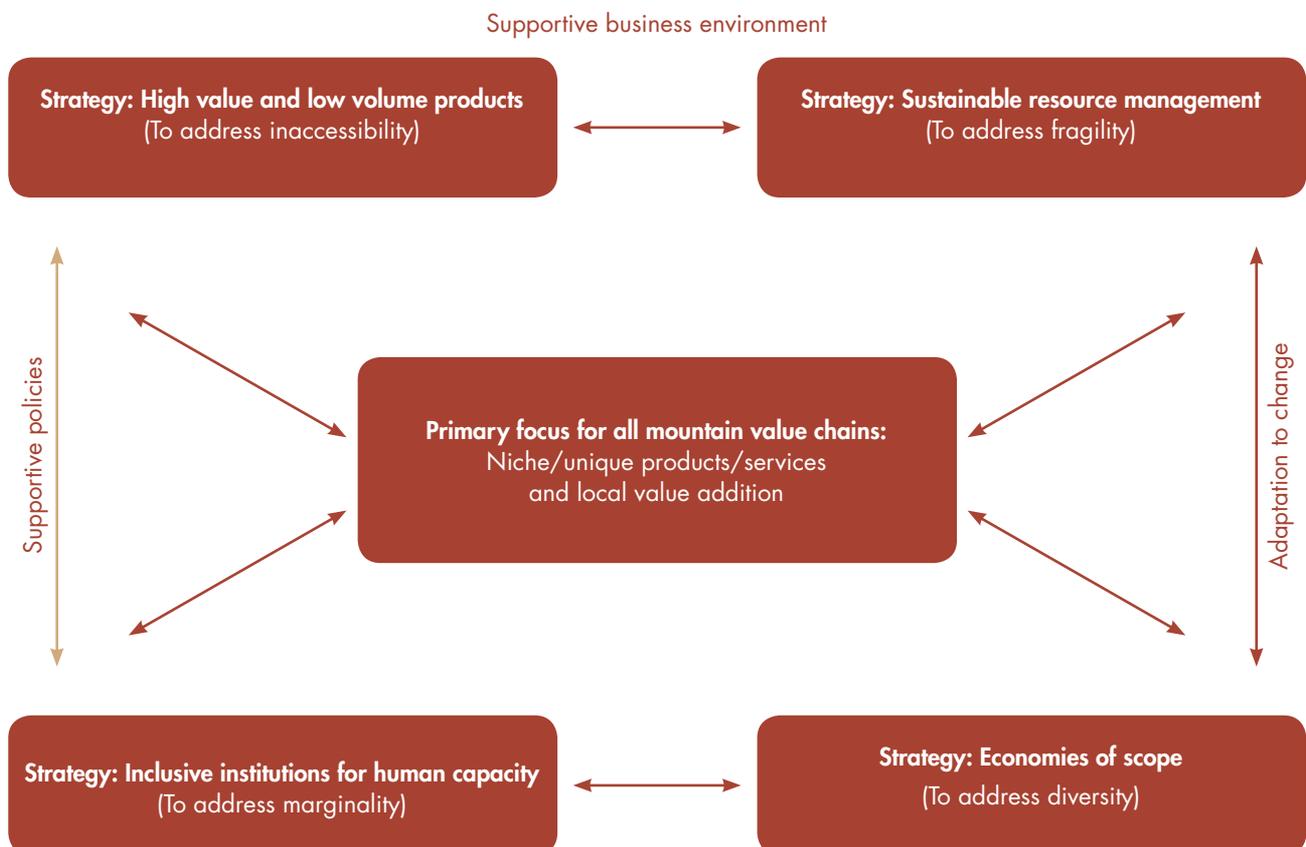
Strategic Framework for Mountain Value Chains

The previous section highlighted the importance of analysing mountain value chains according to their mountain specificities in order to identify which value chain has the greatest potential within the respective mountain context, and to recognise which mountain specificities are particularly dominant and relevant to the strategic orientation of the intervention. This analysis can be used to prioritise strategies according to the prevailing mountain specificities. Figure 5 presents the four mountain challenges (corners) in the context of an opportunity (centre).

The core strategy for any mountain value chain development, regardless of which challenge prevails, is the focus on niche or unique products or services with local value addition potential and opportunities for pro-poor growth. Four core adaptation strategies are suggested in line with the four mountain challenges. The application of these strategies can be prioritised according to the strength of the prevailing challenges.

For example, if inaccessibility is very pronounced, the core strategy is to focus on high value, low volume products. For fragility, the primary focus is on the sustainable management of natural resources and improved earnings through local

Figure 5: **Prioritised strategy set according to prevailing mountain imperatives in the presence of opportunities**

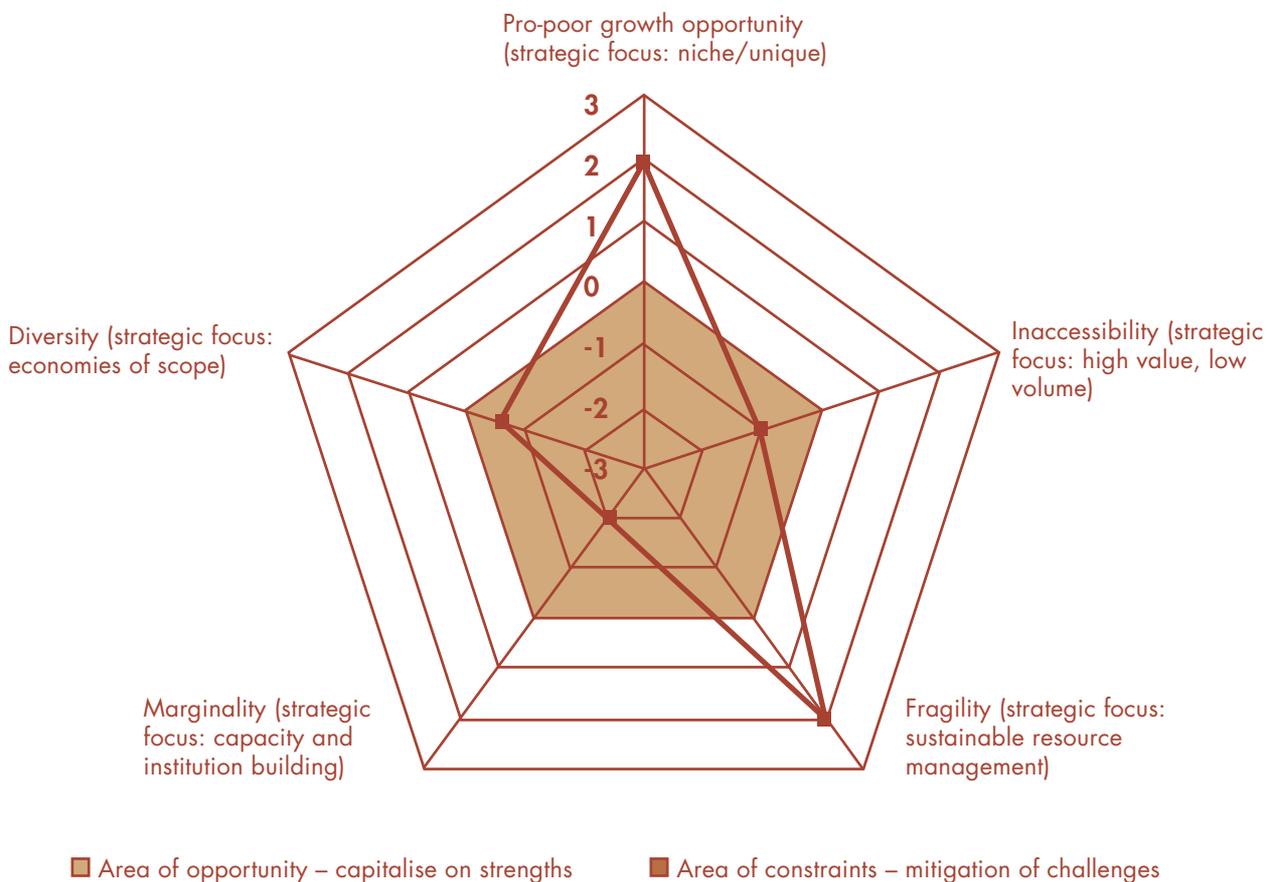


value addition, rather than increased raw material extraction. For marginality, the optimal strategy is to build mountain people’s capacity, awareness, and visibility through the facilitation of enabling, inclusive institutions. Finally, for diversity, the most promising strategy is to focus on economies of scope rather than scale. As explained, mountain specificities are not independent components, but rather strongly interlinked. Thus an integrated strategic approach is required.

A spider-web diagram can be used to highlight the weight of each specificity, that is the rating of the mountain specific characteristics of a selected value chain (see Tables 2 and 3), as an aid for prioritising or combining strategies into an integrated strategic approach. Figure 6 shows a spider-web diagram map of the mountain specificities for seabuckthorn using the values shown in Table 3. As explained previously, the scale is from +3 (very good opportunity for VC development) to -3 (not very good or challenging environment for VC development). In the spider-web diagram, the challenging area (negative values) is differentiated from the area of opportunity (positive values). The seabuckthorn diagram shows that the opportunities for this product are high due to the niche. Challenges include the weak market capacity of mountain communities due to their marginalisation. In a case like this, the primary strategic focus would be to address these challenges through capacity and institution building, such as common facility centres, which allow greater gains to be captured by facilitating economies of scope at the processing level. Overall, strategies should be selected that capitalise on the strengths of mountain specificities with ratings in the opportunity area, and minimise and mitigate the aspects of mountain specificities with ratings in the challenging area. More generic value chain strategies, such as building a supportive business environment, facilitating supportive policies, or adapting to global change are also relevant for all the different scenarios.

Practical examples of the individual value chain strategies are presented in the following, based on the pilot activities carried out in the Hindu Kush-Himalayan region. Other equally important aspects like the consideration of boundary elements such as business development services, the policy framework, and global change parameters are also discussed.

Figure 6: Mapping mountain specificities to set a strategic focus: the example of seabuckthorn



Focus on Unique and Niche Products with Potential for Local Value Addition

Identification and development of unique and niche value chains lies at the centre of any value chain effort for mountain people. Only value chains of this type have a long-term and self-sustaining potential, and then only if managed sustainably, as they represent the unique comparative advantage that mountain products have over the plains. If the unique or niche element is missing in a mountain value chain, other more accessible and less fragile, marginalised, or diverse geographical areas will quickly and more successfully compete for the same markets. The comparative advantage of unique and niche products offers mountain producers a competitive edge over plains areas. Notwithstanding this, there are examples of how even this competitive advantage has been eroded, for example through the promotion of large-scale greenhouse facilities, which reduce the off-season competitive edge of mountain areas, or the industrial development of cheaper synthetic replicas of traditional mountain products, like cordyceps in China. Such substitutes can cause a complete collapse of premium markets, even though their chemical constitution might not be identical to that of, original mountain product. It is necessary to focus strongly on awareness-raising about the unique characteristics and high value of genuine mountain products

National- and regional-level consultations in the Hindu Kush-Himalayan region have shown that most countries rank high value product strategies as one of their highest areas of interest. Successful unique and niche examples include NTFPs, MAPs, organic food products, and mountain tourism. Farmers in China, India, Nepal, and Pakistan already have product and service-based partnerships, and benefit by producing revenue-generating high value products. Some areas, such as Bhutan, Kunming (China), Himachal and Sikkim (India), Ilam (Nepal), and North West Frontier Province (Pakistan), have already made substantial progress in identifying sustainable niche products and services (Jodha 1992).

The uniqueness and niche of a product or service is unlikely to contribute to poverty alleviation if the targeted mountain population are only resource providers and are unable to increase their share in the value chain. To reap greater benefits, mountain people require stronger value addition capacity and function in a given chain. Local value addition in mountain areas has beneficial aspects in terms of all four prevailing mountain challenges. For example, in terms of inaccessibility, the transformation of the raw material into products cuts its weight through processing; fragility is addressed by increasing

Leveraging the uniqueness of medicinal and aromatic plants in Bhutan, Nepal and Pakistan

by Dyutiman Choudhary, ICIMOD

A particularly valuable, but not yet fully explored, set of unique and niche products of mountain areas are the medicinal and aromatic plants (MAPs). There are many potentially valuable species that have not yet even been recognised by mountain people or the pharmaceutical, cosmetic, and food industries. Equally, the value of some plants is known to the market, but producers and collectors lack this market knowledge and receive only meagre returns. In the latter case, mountain people are strongly disadvantaged as they lack the information, capacity, and organisation to interact equitably with the market.

The strategy for overcoming this disadvantage is to improve information sharing, coordination, and networking among all actors in the value chain. The Medicinal and Aromatic Plants Programme in Asia (MAPPA) was initiated to do just this, with a specific focus on promoting strategic research, entrepreneurship development, and networking for efficient market linkages. Producer groups were established, which have improved primary processing and value addition at the local level, and have led to the adoption of quality standards, made market information more accessible, and improved bargaining power of the producers.

The producers' knowledge of pricing, processing, and marketing has improved, which has led to higher returns. In Nepal, the sale of annual and biannual species added an average of USD 200 per year to the household income of producers. In Pakistan, cultivating lemongrass (*Cymbopogon citratus*) led to an income of USD 1,900 per acre (0.4 ha) in the Chagharzai valley, compared to an income of USD 375 per acre from traditional agricultural crops like wheat. Following this, value addition technologies were developed for five species through collaboration with research institutes, and women's groups were trained to produce and market the value added products.

Marketing the uniqueness of the Himalayas

by Ester Kruk, ICIMOD

Tourism is the largest and fastest growing industry in the world, increasing from 25 million international arrivals in 1950 to 842 million in 2006, with international arrivals expected to double to 1.5 billion by 2020. Mountains are important assets for the tourism industry. They have an estimated 15 to 20 per cent share of the global tourism market, generating between 100 and 140 billion USD per year.

With the highest mountain peaks in the world, different climatic zones with unique and rare flora and fauna species, and a variety of recognised unique anthropological hill and mountain cultures, the tourism potential of the Himalayas is beyond dispute. At the same time, the region is struggling with high poverty ratios, exacerbated by environmental degradation and climate change, making traditional livelihood options increasingly unsustainable. Tourism has been recognised as one of the most promising alternative livelihood options for the region, creating local income and employment opportunities for mountain people that can transform the mountain specificities into economic opportunities. Being labour intensive, having relatively high multiplier effects, and requiring relatively low levels of capital investment, tourism can generate tangible benefits in mountain areas where traditional livelihoods are under threat.

Although tourism has had a demonstrated impact on a more equitable economic growth in the Himalayas, its full potential for poverty reduction and for the improvement of the mountain environment has so far been underutilised. This is partly due to the fact that, on a macro-scale, the tourism potential and opportunities of the region are still largely unexploited. Another reason is that, to date, many mountain tourism development activities have been haphazard and unorganised. A lack of inter-sectoral coordination, combined with policy failures, a lack of supply side facilities and management and human resource development, and weak linkages between tourism and the local production system have caused high 'leakages' of local tourism-generated income, thus diluting the high multiplier effects of tourism income on the local economy.

Tourism value chain analysis can trace the tourist dollar so that appropriate interventions can be implemented to ensure that mountain economies get a larger share of tourism income. Through the careful selection, analysis, and development of promising tourism value chains in the region, it is possible to identify ways for the poor to enter or participate more, or more efficiently, in tourism value chains. This will help mountain people to identify and more successfully exploit the full range of production, income, and employment opportunities within mountain tourism value chains, and, thus, optimise their poverty reduction potential. Two decades of mountain tourism research in ICIMOD have shown that tourism by itself does not necessarily lead to mountain development, nor generate spontaneous benefits for mountain communities. Instead, deliberate efforts need to be made to link tourism to the local production system and community development if it is to realise its poverty reduction potential – a conclusion that has also been echoed in the lessons learned from later development projects (such as the Tourism for Rural Poverty Alleviation Programme in Nepal) and that has become a main focus in the recent pro-poor sustainable tourism movement. Mountain tourism value chain analysis and development is a useful instrument to ensure that mountain people benefit from mountain tourism.



benefits through value addition rather than increasing raw material extraction; marginality is reduced by organising value addition through community-based institutions, which also offer a platform for capacity building and an environment for economies of scope at the processing level. Most importantly, local value addition offers the opportunity to generate off-farm income, which is particularly relevant for landless and land-poor mountain people. Hence, value addition is one of the core concepts in leveraging a value chain for development.

Apart from material value addition, non-material or symbolic value addition merits particular attention within the context of the Hindu Kush-Himalayas. Symbolic value addition requires an understanding of the quality attributes of consumers. The strategy requires the valorisation of goods or services based on a territorial identity (Ray 1998). A well-known example is the highly profitable marketing of the Himalayas themselves, and linking of this territory with specific products and services such as Himalayan coffee, tea, handicrafts, or, most prominently, mountain tourism. Organic production, eco-labelling, certification, and standards are further examples of non-material based value addition strategies.

Concentrate on High Value and Low Volume Products

When inaccessibility is the most pronounced mountain challenge, the prime strategy is to concentrate on unique and niche mountain products and services that are high in value and low in volume. High value and low volume is the ideal mix to deal with inaccessibility and long and expensive transportation.

Value chain analysis shows that, although mountains in the HKH region are endowed with an extensive variety of high value, low volume products, especially MAPs and other NTFPs and honeybee products, most mountain communities are not sufficiently aware of the value of these products and of technologies that could help to decrease the weight of such products for transportation. The collection, processing, and marketing suffers from a multitude of problems, which in most cases prevents mountain people from adequately benefiting from the resources they are endowed with. The objective is to increase the awareness of mountain people about the value of selected products and services, as well to provide necessary technologies and capacity to locally reduce the weight of such products, which will add value and reduce transportation costs.

Commercialising yarcha gunbu in Bhutan

by Dyutiman Choudhary, ICIMOD

Cordyceps sinensis (yarsa gumba) is a high value medicinal plant variety found in the alpine regions of the greater Himalayan region. The area in which *Cordyceps* is found in northern Bhutan is home to one of the remotest and poorest communities in the country, who earn their livelihood from yak herding at high altitudes.

In 2004, the Government of Bhutan laid down a defined process to balance conservation and livelihoods through yarsa gumba. A committee was formed within the Agriculture Marketing Services (AMS) and auctions were organised. Only one member from each household was allowed to harvest, the harvesting period was limited to one month, and a local certification system was developed for traceability.

A basic minimum price of Nu 37,500 (USD 830) per kg was initially declared by the Government. However, due to

competition between buyers, rates reached Nu 87,000 (USD 1,930) per kg. Before more competitors entered the market, the few buyers had made a sizeable margin; with competition their margin reduced in favour of the collectors. Collectors in northern Bhutan earned a considerable amount, with an estimated total 300 to 400 kg of *Cordyceps* sold. Nevertheless, the sudden rise in income also raised concerns with the Government of Bhutan. Questions arise as to the social implications of this enormous income to once impoverished and poor communities, and whether or not the collection restrictions will sufficiently conserve this natural resource.



Manage Natural Resources Sustainably

Mountain fragility, most commonly addressed by regulatory policies or community-based mechanisms for sustainable management, can also be addressed by increased local value addition. Value addition increases economic returns per unit, as opposed to mere extraction and supply of raw material, without environmental degradation. Further, the higher price achieved for the product or service increases the local communities' interest in using the raw materials sustainably. The focus is on intensification in terms of total value addition per unit of activity, rather than in terms of extraction through primary production. The sustainable management of natural resources in order to avoid over-extraction, which would eventually destroy the niche, must be a major concern for any product or service selection. It is a prime area for sensitive policy interventions in order to balance conservation and commercialisation.

Innovative, profit, or market-driven environmental conservation concepts that simultaneously address environmental and economic concerns are very valuable in the context of conservation requirements. For example, large cardamom, shed-grown coffee, various mushrooms, and herbs (all of which have high external demand) perform better in well-forested areas. The promotion of such products is directly linked to the precondition of environmental conservation (Papola 1998). Finally, by diversifying the demand for mountain resources and increasing off-farm value chains, the pressure on natural resources can be eased and cash inflow can be increased.

***Garcinia gummi-gutta* value chain in Karnataka, India: A perfect blend of commerce, conservation and local livelihoods**

by Giridhar Kinhal, ICIMOD

Garcinia gummi-gutta, commonly known as gamboge or Malabar tamarind, is a medium-sized tree found in Karnataka, India. The fruit can be used as a culinary additive and fish preservative. The edible oil extracted from the seeds of ripe fruit is cholesterol free, can be used as vegetable butter, and also aids digestion. The fruit juice and syrup make a refreshing drink. Fruits are traded in local, regional, and national markets, and the rind is marketed in large quantities. The trees are often destructively harvested by cutting branches for their semi-ripe fruits. This method destroys the mother tree and leaves no seed for regeneration. Because the fruit is unripe, it is difficult to deseed and to collect the rind for drying, and less oil can be extracted from the undeveloped, sterile, and small seeds. This commercial destruction has replaced traditional non-destructive methods, which only used the seeds from ripe fruit fallen on the ground. Traditional harvesting practices do not destroy the mother tree, leave some seeds from fallen fruits for regeneration, and yield naturally ripened fruits that are easier to deseed and provide better quality rind in less processing time.

A participatory analysis of the value chain pointed to several non-competitive (and non-exclusive) uses of the rind, pulp, and seeds of this species. The local people involved in the process could understand the relevance and importance of a 'harvesting period' so as to obtain all the products simultaneously and maximise health and economic benefits, while ensuring the conservation of species. The sustainability factor rested on a quality harvest by hand picking fully ripe yellow-coloured fruit with good flavour and high medicinal value.

The processed material from a mature harvest is easier to preserve and lasts longer than material processed from unripe fruit. Rind from ripe fruit weighs more than from unripe fruit and fetches a 40 to 50 per cent better price. Regeneration of the species is also better as seeds from mature fruits have higher germination potential. Thus it is evident that a multi-product NTFP value chain makes the chain commercially stronger and ecologically friendly. It is equally important to highlight that such a value chain reduces the risk of price fluctuation for one or more by-products, thereby meeting livelihood expectations. This case study indicates that, while selecting a value chain for pro-poor development, preference must be given to species with multiple products that are non-competitive and non-exclusive.

Community enterprises and conservation of biodiversity

by Dyutiman Choudhary, ICIMOD

Non-timber forest products, previously used by rural communities for subsistence purposes and small-scale trading, are increasingly in demand by large-scale industries. The different end uses of NTFPs create competing demands for a limited resource base, which, if not controlled effectively with appropriate institutions and processes, may result in the irreversible loss of biodiversity. Balancing commercialisation with the conservation of natural resources is a major concern for the whole HKH region.

ANSAB, the Asia Network for Sustainable Agriculture and Bioresources, and partner of ICIMOD in pilot value chain development in Nepal, supported a micro-enterprise project in the village of Kailash in Bajhang district to demonstrate how local community institutions can balance income generation with biodiversity conservation through NTFPs. With the support of ANSAB, a forest user group formed Malika Handmade Paper Pvt Ltd in 1999 to produce handmade paper out of lokta, a shrub whose bark produces a fibre suitable for papermaking. The user group members conserve lokta in its natural habitat and harvest it sustainably.

The annual turnover of the enterprise in 2002 was NRs 294,000 (USD 3,818) with profits of approximately NRs. 105,000 (USD 1,363). The community forest has been certified under the Forest Stewardship Council certification for sustainable forest management. The model has been replicated in other regions of Nepal.



Facilitate Inclusive Institutional Integration for Competitiveness and De-marginalisation

Mountain regions are more vulnerable to market integration as they have been historically under-invested in and have experienced the negative socioeconomic effects of external interventions. Mountain integration requires the steady, but careful, improvement of mountain economies and communities.

A critical volume can be achieved for economies of both scope and scale through horizontal integration of mountain producers into self-help groups, producer groups, cooperatives, or facilitation centres, with additional gains in negotiation power and increased visibility. Experience demonstrates that appropriate rural institutions can facilitate market access and additional income generation, even with inadequate physical infrastructure (Dorward et al. 2003; Biénabe and Sautier 2005; Buerli et al. 2008). Such community-based institutions also offer a platform for capacity building. A main objective is to improve knowledge and skills on local value addition and product diversification; the sustainable extraction, management, and harvesting of natural resources; relevant policy frameworks; and basic entrepreneurship and marketing. Capacity building should not only focus on the introduction of new skills, but also strengthen and harness traditional knowledge for conservation, production, and processing. Apart from specific capacity building activities, skills and knowledge are built by integrating mountain producers into the value chain development process, i.e., participatory instruments should be considered whenever feasible. Interestingly, the marginality of mountain communities, which in several cases represents a weakness, is a strength in terms of cooperation, as remote communities have a strong sense of collectivism and social capital.

Once mountain producers are organised, it is more feasible to aim for vertical integration, i.e., more long-term agreements or contracts between upstream and downstream actors in the value chain. In addition, vertical coordination increases transparency and decreases transaction costs along mountain value chains. Through horizontal integration, mountain producers gain a stronger governance position in a value chain; through vertical integration they gain more volume, negotiation strength, fairer terms of exchange, and security. Last, but not least, the vertical knowledge transfer is an important learning mechanism for mountain producers.

Bay leaf value chain in Nepal - Horizontal and vertical integration successfully fights poverty

Within one year, strategic value chain interventions had a significant impact on the poverty level and policy discussions

by Michael Kollmair, Dyutiman Choudhary, Bishnu Hari Pandit, Giridhar Kinhal

The value chain pilot project for bay leaf in Udayapur district in eastern Nepal provided a successful example of the value of institution building and horizontal coordination. The value chain analysis indicated poor access to markets with farmers confronted by secretive and disorganised market systems and biased information flows. The result was that farmers reaped only small benefits, which was also due to their lack of awareness of how to add value. The farmers lacked the capacity to bundle their produce and achieve a critical volume for negotiation power, they had little idea of how this aromatic forest product could be processed and more sustainably managed and harvested, neither was there any efficient downstream market linkage or information. Indeed, the mountain communities in this pilot study were fully dependent on the demand of a single trader.

The main focus of the pilot activity was on institution building that could deliver a critical volume and capacity in the form of negotiation skills, value addition, and sustainable resource management. Following a participatory approach, collectors and producers were formed into groups and federated institutions to enable production and marketing. Gathered market information was shared and mountain producers became aware, for the first time, of how their value chain was constituted. Capacity building programmes were delivered to the groups. Eventually, a contractual arrangement was signed between traders and collectors, partly as a result of building competition and bringing new traders into the area, which led buyers to provide future training on collection, grading, sorting, and packaging leaves for added value.

The overall result of the pilot was that, within only a little over a year, the price increased from NRs 3 to 7 per/kg to NRs 16 per/kg for 100 tons of 'A' grade leaves under the contract. With the additional income, many families moved above the national poverty line. A fine example of how a small, but targeted, value chain intervention can address poverty within a short period of time.

Knowledge partnerships for alternative livelihoods in beekeeping

by Farooq Ahmad, Uma Partap, Min Gurung, ICIMOD

Value chain analysis for beekeeping in the Hindu Kush-Himalayas revealed a great variety of ways in which beekeeping can support the livelihoods of mountain people. Bees provide honey, wax, propolis, royal jelly, beeswax, and bee venom for both home use and sale. In addition to direct income from bee products, beekeeping generates off-farm employment opportunities in many fields including hive carpentry, honey trading, the renting and hiring of bee colonies for pollination, and bee-based micro-enterprises. Beekeeping also supports agricultural production, forestry, and the maintenance of biodiversity and natural resources through pollination services.

In light of the information gap about the above opportunities, a pilot study in all eight countries of the Hindu Kush-Himalayas gave priority to improving the skills and knowledge of stakeholders in order to strengthen their technical capacity. Awareness and training programmes for new technologies enabled local farmers in remote areas of Afghanistan, Bangladesh, India, Nepal, and Pakistan to shift from collecting indigenous honey for their own use to managing hives and producing honey for sale. Many beekeepers, as in the case of Himachal Pradesh, India, now successfully rent their honeybee colonies to apple farmers for managed pollination for USD 12 per colony and season. For Himachal Pradesh alone, with over 80,000 hectare of apple plantation in 2009, the demand for bee colonies for pollination exceeds 240,000 colonies and the current supply is less than 20,000 colonies. Hence, there is an immense scope for additional income for beekeepers.



Economies of Scale or Scope? Emphasise the Basket Approach

Mountain areas are characterised by the scale of their diversity. This great variety and the typical scattered production in mountain areas pose challenges for production in terms of volume. In the generic value chain approach, much of the discussion on improving small producers' returns is about achieving economies of scale, i.e., reducing the average cost per unit by increasing the number of units produced. While this concept has its merits for monocultures in low lands, a single focus on economies of scale in mountain areas poses risks. The promotion of individual products can lead to an increased demand pressure which, if uncontrolled, provides incentives for over-extraction and exploitation of niche products. Pressure on the fragile mountain ecosystem increases and biodiversity potentially decreases. Mono-cropping can increase human vulnerability and food insecurity when the specific value chain weakens or fails. Hence, the intensification of production for the total system, i.e., of more components of the mountain production system rather than of individual components, is a more sustainable strategy.

Economies of scope (producing two or more different products together, rather than separately, to increase cost-efficiency) can mitigate the above concerns. Economies of scope, address scattered production, high mountain diversity, fragile and weak carrying capacity, and the low investment and risk capacity of mountain communities. Mountain people are largely subsistence oriented agriculturalists, and traditional systems have focused on diversity and sustainable resource extraction. A basket approach is considerate of the close link between livelihoods and the environment in mountain areas, which calls for an integrated system of production that takes a holistic perspective rather than a focus on individual sub-sectors. By promoting a set of high value products and services produced by mountain people, the total production system can be intensified and, at the same time, the risk of degradation of natural resources or food insecurity can be reduced.

One can argue that economies of scale are more appropriate in hill areas, where the challenging mountain characteristics (inaccessibility, fragility, marginality) are less pronounced, than in more remote mountain areas. The more inaccessible, fragile, and marginal a mountain area is, the greater the challenges and risks involved in production, making economies of scope the preferred strategy.

Aiming for common facility centres in Bangladesh's Chittagong Hill Tracts

By Dyutiman Choudhary, ICIMOD

Producers of medicinal and aromatic plants in the Chittagong Hill Tracts of Bangladesh are disadvantaged in terms of access to information, technology, and markets. Despite the great diversity of MAPs available, there are few options and facilities to produce quality and value added products to meet market demands. In addition, the great variety of plants makes volume production challenging.

Community-based management of MAPs in private and common lands, as well as cultivation in farmers' fields, was initiated as a way to capture economies of scope, and through this augment income and diversify livelihoods from MAPs. Common facility centres are planned for the processing and value addition of MAPs and to provide the necessary forward and backward linkages. Producer groups will operate and manage the centres and guarantee year round processing and supply of MAPs.

It is estimated that two tons of MAPs from eight different species could be handled by the common facility centre in Rangamati district in 2011, bringing additional income to marginalised communities.



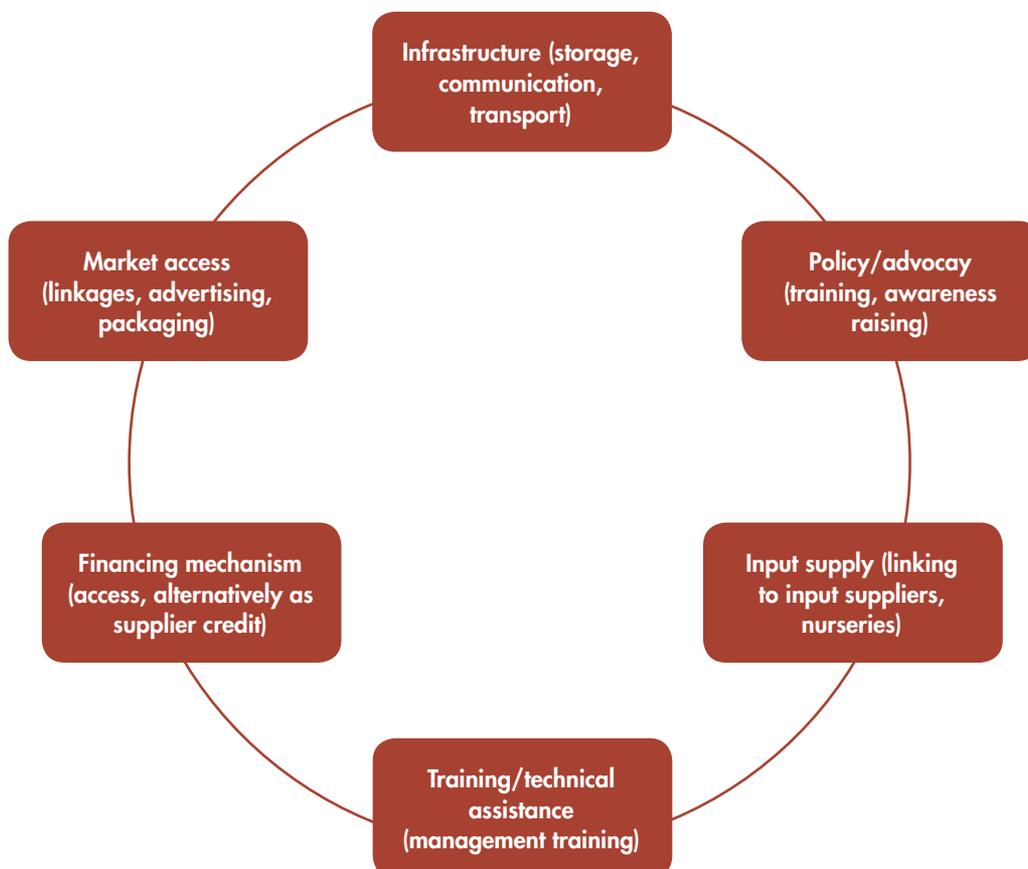
Facilitate a Fertile Business Environment and Private Sector Involvement

Efficient business development services, which are central to improving the role of mountain producers in value chains, are rare in mountain areas. As listed by the Committee of Donor Agencies for Small Enterprise Development (2001), such services include training, consultancy and advisory services, marketing assistance, information, technology development and transfer, and business linkage promotion. Those that are offered are delivered by government extension offices, but the inaccessibility and remoteness of most mountain areas poses significant challenges to the local availability and efficiency of such services. Hence, the emphasis has shifted towards encouraging the private sector to deliver business development services.

The private sector plays a pivotal role in any value chain, and for mountain value chains in particular as they are on the fringe of public services and downstream market networks. Using the value chain approach, key downstream private sector value chain actors can be involved in the rapid diagnosis of key bottlenecks within the value chain that are mutual constraints for both upstream and downstream players. This will facilitate ownership and agreement on subsequent key interventions and reforms. The value chain approach is a platform for exchange and coordination on common constraints and potential solutions. Furthermore, the private sector is crucial in the delivery of business development services in many remote and underprivileged areas. Where the public sector can only play a minor role due to lack of outreach resources, the private sector is encouraged to take initiative alone, or in the form of public-private partnerships (PPPs).

Overall, the stronger the equitable involvement of the private sector, the more sustainable growth and poverty reduction can be achieved, as it is driven by the market rather than by development incentives. Finally, the private sector benefits from stronger supply and improved quality capacity of upstream producers.

Figure 7: Seven key business development services for upstream value chain stakeholders



Source: Miehlsbradt and McVay 2003

Attracting the private sector to develop untapped mountain potential

by Sanjeev Kumar Shrestha, Bashu Aryal, Eklabya Sharma, and Dhruvad Choudhury (Adapted from IFAD Newsletter 2008)

The untapped potential of mountain areas in the Hindu Kush-Himalayas is already attracting global agencies, which help local farmers with production by providing technology support and processing facilities. The value chain analysis of non-timber forest products and medicinal and aromatic plants in the deprived highlands of Mid-Western Nepal revealed high market potential. However, most raw material is collected from the wild, often in highly unsustainable ways. Mountain people lack both market knowledge about these products and the means to access markets.

The strategy for this pilot study was twofold. The immediate strategy was to meet potential additional demand through domestication efforts, rather than increased raw material extraction from the wild. Leasehold forestry plots made available to poor and marginalised households offered the opportunity to grow forage and forestry species. The marketing of the increased volume of (domesticated) NTFPs and MAPs required strong private sector participation in order to develop into a viable livelihood option. A public-private partnership (PPP) mode was piloted. A multi-stakeholder partnership involving leasehold forestry user groups (LFUGs) and the pharmaceutical company Darbur Nepal was facilitated.

After joint performance trials for selected species, Dabur Nepal recommended the domestication of five species and conducted capacity building for LFUG members and technical personnel from the Forest Department. Cultivation of one species, kutki (*Neo-picrorhiza scrophulariflora*), was initiated under the pilot study on 4.35 hectares of leasehold land in two districts (Jumla and Humla) involving a total of 112 members (including 43 women) belonging to 9 LFUGs. In order to ensure a steady supply of seedling material, the pilot supported polyhouse nurseries in both districts, with more than 70,000 saplings produced in Jumla alone.

With the encouraging results of the pilot study in Humla and Jumla, the Western Upland Poverty Alleviation Project (WUPAP) embarked on scaling up to two more districts. Further discussions were facilitated by the pilot study with Male International, a private sector firm dealing in MAPs and organic MAP products and serving an international clientele. Male International expressed interest in a partnership with the project, but suggested a quality assessment of raw materials covering more species. Through this tie-up, Male International will provide technical support, capacity building to project LFUGs, and market organic certified MAPs. The pilot demonstrated an institutional model that can be replicated to foster private sector participation in livelihood security initiatives.



Facilitate Supportive Policies

Policy solutions need to be promoted that have a long-term vision that improves the stake of both mountain producers and service providers in a socioeconomic and environmental sustainable manner. A major effort is required at the policy level to support long-term and sustainable mountain value chains. External, demand-driven resource extraction leads to indiscriminate and inappropriate intensification. Unfavourable exchange terms lead to the over-extraction and over-use of mountain resources. In certain cases, this over-extraction can lead to the deterioration of the availability of locally available food or health-based products. This reduces productivity and sustainability in the long run and causes long-term damage to mountains and their communities.

Changing the system: Reforming governmental extension services and policies

by Kate Schreckenberg* (ODI), Giridhar Kinhal, and Dyutiman Choudhary (ICIMOD)

Under a previous system of collection, the Uttarakhand Forest Department opened up certain areas for bay leaf collection on a five-year rotational basis. Permits were allocated to traders, who hired local people to do the harvesting. Community members were encouraged to harvest as much as possible from each tree, which led to the cutting of whole branches and the stripping of bark. They did not grade the leaves, and received 8 to 10 rupees per kg, a price determined by traders at the main trading centres in the state.

Under the pilot project, a new system was established whereby government forestry officers train group members in sustainable harvesting methods (harvesting only small twigs with leaves rather than whole branches), and in proper drying, grading, and storing techniques. The groups have also devised norms to ensure sustainable harvesting among the wider community, such as allowing only one collector per household and only one head-load per day. Once the leaves have been dried and graded, they are packed into sacks and carried to a storage depot, where collectors receive an initial payment from the Forest Development Corporation with the balance paid once the leaves have been sold.

This more flexible policy on how the leaves are sold has also benefited the harvesters. Previously, all bay leaves were auctioned at one of three sites established by the Forest Development Corporation, but the closest of these was over 300 km away, leading to high transport costs for the producers. Under the pilot project, a once-off local auction was organised in the state for the first time. The pilot also obtained organic certification for the leaves, contributing to a higher sale price. Members of the self-help groups will also be involved in the further grading and packaging of bay leaves after the auction, and are planning to take on simple processing tasks, such as making bay leaf powder, an ingredient of the spice garam masala.

Having the support of Uttarakhand's Principal Chief Conservator of Forests has been crucial. Creating an effective partnership with the state Forest Department has also been a breakthrough, enabling readjustment from the forestry working plans to be agreed, for example, in setting up bay leaf collection areas. Organising the groups to introduce new systems for the collection and trading of the leaves has also been challenging, as has the complex process of obtaining harvesting permits. A delay in granting the permit in the project's first season meant that groups were only able to collect around 7 tons of leaves, far less than the 30 ton collection permit from the Forest Department.

The Forest Department, meanwhile, is being encouraged to consider a new rotation system to ensure a more regular supply of income to the villagers. Improving dried leaf quality and developing value-added products is also being researched. Beyond that, the Principal Chief Conservator of Forests is interested in using the experience gained from the harvesting and marketing of bay leaf as a model for other non-timber forest products in the state.

*. Kate Schreckenberg, ODI associate, is ICIMOD's liaison partner for the bay leaf value chain pilot study in India and Nepal. This account was first published in the *New Agriculturist Journal*, June 2009 (Schreckenberg 2009)

Supportive policy framework for social inclusion: Reserving riverbed farming for the landless

Helvetas, Nepal

Vast tracks of riverbed in the Hindu Kush-Himalayan region are dry and fallow from October to May. This land is common land under the responsibility of village authorities. The land is fertile, yet unused.

The main objective of the riverbed farming project was to develop a system through which landless and land-poor people can gain access to riverbeds during the dry season. This would enable them to cultivate horticultural products, link up with local and regional markets and, thereby, generate income. Under the project, local authorities and groups of landless and land-poor sign leasehold contracts providing access to riverbeds for horticultural activities exclusively to landless and land-poor people. Local service providers offer competent training and technical services to groups of riverbed farmers on demand.

As a result, around 2,000 landless and land-poor households are engaged in the seasonal cultivation of horticultural products in dry riverbeds. Income from the sale of products has reached 400 to 600 USD per household over the 5-month cultivation period.

Source: <http://www.helvetasnepal.org.np/rbf.htm> (accessed June 2009)

Take Macro-level Changes into Consideration: Globalisation and Climate Change

In recent years, new economic growth, shifting population dynamics, and climate change have taken place so intensely and rapidly that the established adaptation mechanisms of the people of the Hindu Kush-Himalayan region are losing their efficacy. The result has been an increased risk of living in poverty and further marginalisation for mountain people. In light of the rapidly changing economic, social, and environmental context, there is an urgent need to make value chains responsive.

Urban labour markets attract high numbers of male mountain migrants seeking better income opportunities. The traditional value chain functions of men are now performed by women in many mountain areas. Often this increases women's burden and decreases the chain's efficiency. Drudgery reducing, women-friendly technology and support services need to be identified for women as upstream value chain actors. Capacity-building programmes need to adjust to the changed or changing socio-cultural setting. For example, in Nepal's Far West, business development training for mountain producers traditionally targeted men; however, due to high rates of male labour migration, no men are present for the trainings and projects need to attract women and adjust their training content and level accordingly.

Modern information and communication technologies have had a revolutionary success in development. In mountain areas, the use of modern technology is a crucial asset to improve information management, market access, and financing access. For example, in the remote Himalayan areas, mountain communities are successfully using communication technologies for planning the area allocated to specific crops, storage and long-distance trading, market information, and tourism activities.

Climate change is expected to increasingly affect agro- and forest-based value chains throughout the greater Himalayas, particularly in terms of changing precipitation and lack of water as input for value chains. Access to water is becoming more and more critical, particularly in the semi-arid areas of the Hindu Kush and western Himalayas. This requires stronger water harvesting mechanisms at the community level and the selection of value chains according to water requirements for both production and processing, also in view of potential water resource conflicts with downstream water users.

Conservation of biodiversity as an adaptation strategy to climate change shows potential. Diverse crops and varieties reduce the risk of crop failure, e.g., the great variety of potatoes cultivated in the Andean mountains for centuries has enabled farmers to adapt to different biophysical parameters such as soil quality, temperature, inclination, orientation, and exposure.

Guiding Questions for Practitioners

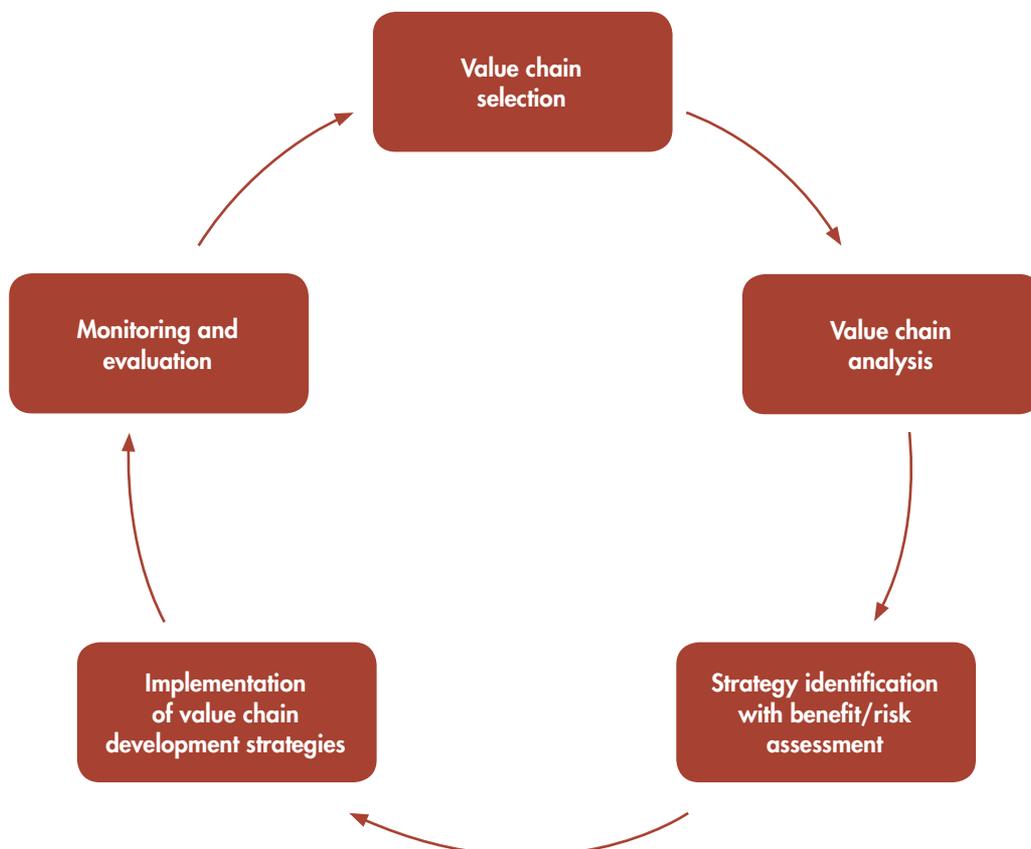
The following guiding questions support the design and implementation of value chain development projects in mountain areas. They are based on the work of Riisgaard et al. (2008) and enhanced by the mountain perspective. A step-by-step approach is outlined for the value chain development process (Figure 8) and guiding questions are provided for practitioners.

Value Chain Selection

The selection of a value chain is described in detail above under the subheading 'Choosing the right value chain by examining its mountain specificity'. The following questions add to the previous description:

- Is the product produced by the mountain poor? How will upgrading benefit them?
- What are the market characteristics: size; stability of market; scale of local, domestic, regional, and international demand; development of markets over past years and prospects for coming years?
- What is the overall chain structure: stakeholders; flows of products, information, and finance; product transformations and value added; and competition and trade policies? How transparent is the chain?
- What are the roles of the mountain actors in the value chain? What is the potential for improving their role and benefits in the chain? What local value addition options are feasible? Can they be achieved within the given time, and with the financial and human resources of the underlying project/programme? Does the value chain bear potential benefits for those outside the value chain, e.g., landless or land-poor, through employment creation?

Figure 8: **Basic steps in the value chain approach**



Special Note: Gender Analysis in Value Chain Development

Gender analysis needs to be embedded in every value chain analysis and particularly for value chain stakeholders in mountain areas. Gender is not a separate, independent chapter of the value chain approach, but rather an aspect that needs to be integrated from the beginning to the end of the value chain approach.

The gender lens points to the need to (i) disaggregate gender in all economic data; (ii) ensure gender inclusive language; (iii) include non-market activities for a full picture of the value chain; (iv) analyse inequalities in power relations and, hence, capabilities; (v) consider the effects of gender inequalities driven by meso- and macro-levels.

Much effort has already been made to integrate gender aspects more strongly into value chain thinking (McCormick and Schmitz 2001; Lilja et al. 2001; Vainio-Mattila 2001). Mayoux and Mackie (2008) offer a very comprehensive set of guidelines. The main elements of their gender lens and checklist are briefly summarised here and should be taken into account throughout the subsequent steps of the value chain guideline (Mayoux and Mackie 2008, p.22):

- Is all the information gender-disaggregated and are gender differences included as a dimension of analysis and monitoring throughout?
- What gendered assumptions are made in language and terminology? For example, in definitions of 'enterprise', 'worker', 'head of household'?
- Are women's 'invisible' and non-market activities part of the analysis and recommendations throughout?
- Are gendered power relations within and between enterprises part of the analysis and recommendations throughout? Within households? Within markets? Within communities? Within development institutions?
- Are the gender implications of macro- and meso-level policies included in the analysis and recommendations?
- Has the full range of female stakeholders not only been included throughout the process, but given a voice?
- Have the gender dimensions of men's attitudes, behaviour, and experiences also been included in the analysis and recommendations?
- What are the implications for the gender skills and gender composition of the management team and/or steering committee?



- Who are the most powerful actors in the chain? What is their role in increasing the benefits for mountain producers?
- Rate the potential value chains according to their manifestation of mountain specificities: uniqueness/niche, inaccessibility, fragility, marginality, and diversity (see Tables 2 and 3). Through the rating, the mountain specificity of a value chain becomes clearer and the effects of any value chain intervention on the mountain system can be better understood, for example:
 - Does the potential chain have a comparative competitive advantage? Can mountain producers meet potential quality/certification standards?
 - Do additional expected benefits outweigh transportation costs? Are goods perishable or easy damageable during transportation? What obstructions does the product/service face while being transported from the mountain area to the next main market centre (illegal tax posts, bribes, conflicting parties, and so on)?
 - What is the capacity of the fragile ecosystem to meet increased demand and what are the potential long-term effects thereof? What is the influence of changing climate patterns: e.g., reduced and irregular water supply at the upstream and downstream level?
 - Do mountain communities have sufficient human capacity to independently engage with markets? If this is lacking, then how can this capacity be built sustainably within the project time?
 - Does the value chain offer opportunities for economies of scale or scope? What are the potential price effects if large volumes are produced?
 - Would the commercialisation of one value chain crowd out subsistence products and thereby increase the risk of food insecurity?

Value Chain Analysis

Value chain analysis, i.e., the thorough understanding of the structure and dynamics of a value chain to identify leverage points for intervention, is the central part of any value chain development initiative. Value chain analysis can be an exhaustive process of academic rigour that lasts over several months and requires much expertise and financial resources. It can also be a very quick and straightforward process by which key elements of a chain are quickly understood through a multi-stakeholder discussion or rapid market appraisal. While the former process is mostly externally driven, the latter involves the value chain stakeholders more strongly and, thereby, increases participation and eventually ownership. The key elements that should be addressed in the analysis are as follows. (For a special comprehensive checklist for value chain analysis of livestock and wild harvesting of common pool resources see Riisgaard et al. 2008).

- Map the overall chain structure: different strands; key steps and actors; flows of products, information, and finance; and product transformations and value added (functional division of labour).
- What is the structure of rewards along the chain?
- Who are the lead firms in the chain (most powerful actors)? What constitutes their power over the chain? What contractual arrangements, other business linkages, or entry barriers (e.g., quality standards, certifications) are in place?
- What are the characteristics of the mountain value chain stakeholders? What are the opportunities they may benefit from and risks they are exposed to?
- Who controls key productive resources, e.g., land, water, access to employment at the community level? Who controls local political power? Does this link to institutions that have an impact on value chain governance?
- Which attributes (e.g., skills, assets, gender, ethnicity, location, age) are decisive for chain participation, and what are the implications for different social groups?
- What are the socio-environmental risks linked to commercialisation in the area, e.g., soil erosion; deforestation; loss of biodiversity; effects on wetlands and communal grazing areas; insufficient supply of food for own consumption?
- Are water reservoirs (lakes, ponds, streams) consumed for commercial use (e.g., irrigation/livestock)? What are the effects on water supply for drinking/cooking and what are the effects on downstream water supply?
- Where are potential leverage points along the value chain that, if addressed, will yield improved and sustainable benefits for mountain producers?

Identifying Strategies and Assessing Risks and Benefits

Based on the value chain analysis, the most promising (3-4) value chain development strategies or upgrading strategies are formulated. In certain cases these might be downgrading strategies (see discussion in Part I). The central objective of the analysis is to identify leverage points which, if addressed, will yield a high positive impact for mountain value chain stakeholders. The strategies which are identified to stimulate these leverage points can be described with respect to the following:

- Expected changes in the form of
 - chain coordination both horizontal and vertical,
 - upgrading or downgrading functions,
 - performance such as quality, volume, compliance with delivery time and stability, production cost, certification,
 - reward structure (including social and environmental dimensions of potential benefits), and
 - risks in chain participation
- Who will benefit the most and who the least? Specify in terms of major socioeconomic groups within the mountain community.
- Does the upgrading strategy go against the interests of other chain actors or local economic or political interests? Is it realistic to overcome the resistance expected as a result of such conflicts of interest? If yes, will it be sustainable once the project exits?
- To what extent will these benefits help address the poverty, environment, and gender issues identified during the value chain analysis?
- How feasible is this strategy in terms of having sufficient resources (human, financial, and time)?
- How is sustainability of value chain development assured? How stable are new or modified business relationships such as contracts? What would prevent either party from ending the relationship or changing its terms?
- What kind of exit strategy is envisaged?

Interference in mountain value chains is interference in a complex system. Any action will have both planned and unplanned reactions and effects. Hence, it is important to assess the risks and benefits of value chain strategies:

- What financial, environmental, health, and social risks will the strategy expose mountain communities to?
- What are potential causes of risks (e.g., price instability, unreliable buyers, yield fluctuations due to pests or changing weather patterns, civil unrest, transportation obstruction due to natural hazards, corruption, and open access resource management)?
- Which social group will be most vulnerable to these risks (the asset poor, women, landless, and so on)? Will the target group generally be able to bear these risks?
- What are the major risks of failure? How do the expected costs and risks compare to the expected benefits?

By performing an ex-ante evaluation of each pre-selected strategy, the most feasible strategies can be selected for implementation, ideally through a multi-stakeholder meeting. The participation of all key stakeholders will increase their ownership and commitment, bring visibility to roles and responsibilities, and give a platform to unheard voices and demands of mountain value chain actors.

Implementation of Value Chain Development Strategies

The implementation of the defined and agreed upon value chain interventions requires a concrete action plan. Who does what, when, where, with whom, and with which resources? The plan needs to list activities against available resources, be it human, financial, or time. Risks and assumptions that can hamper implementation need to be considered. Table 4 shows a simple log frame that can be used for each development strategy.

Outcome and output are formulated on the basis of the target and objective of the value chain development strategy. Activities represent those steps that are necessary to achieve the output and, subsequently, the outcome. The timetable is organised in quarter years (Q) for a better overview. The human and financial resources of the project or other available resources are listed. The listing of activities against available time, human resources, and financial resources allows a rapid understanding of

Table 4: Action plan for value chain development

Value chain development strategy

Expected outcome of the intervention

Expected output of the intervention

Activities	Timetable (in yearly quarters)								Human resources	Financial resources	Risks/ Assumptions
	Year 1				Year 2						
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q...			
Activity 1											
Activity 2											
Activity ...											

whether or not the objectives are achievable within the given constraints. Risks and assumptions also need to be listed in order to recognise constraints that may jeopardise the project's objectives. In the Hindu Kush-Himalayas, particularly natural hazards like landslides or weather conditions, and political and civil conflict, continually interfere with planned activities. Thus, a degree of flexibility needs to be built into the action plan to allow sufficient room for alternative activities or even strategic orientation. The plan also needs to remain responsive to lessons learned, which can be captured from the continuous monitoring process.

Monitoring, Evaluation and Dissemination

Monitoring and evaluation starts right from the beginning of any project. One of the first steps is to formulate a baseline with relevant indicators, which can be measured again at the end of the project to observe the change achieved. Gender, environment, and poverty dimensions in mountain areas need to be considered. Indicators should focus on the selected strategic interventions to capture the change the project is aiming for. The following main elements should be considered:

- What are the major benefits or results in terms of changes in
 - the role of value chain stakeholders through, e.g., vertical or horizontal integration, function or product upgrading, market access, alliances/linkages among chain actors,
 - poverty through sustainable income and resources, livelihood strategies, employment, and resilience,
 - the environment, considering both local and global dimensions, and
 - gender equity.
- How are the additional benefits distributed among upstream and downstream actors? How are they distributed among the mountain stakeholders and communities?
- Were the skills of the upstream actors improved (market knowledge such as visibility of the value chain structure; negotiation and business development skills; technical competence for stronger upstream production, processing, and marketing)? Did a feeling and capacity for ownership of the chain develop among mountain stakeholders?
- What role did the local or national government play? What was the role of community-based organisations or local cooperatives?
- Who are the losers from the intervention, if any? Why and what are the potential consequences for, or reaction of, these individuals or groups?
- To sum up: What were the critical success factors in the value chain development? What kinds of investments (physical, cash, labour, expertise, network, time) were critical to success? What were the major hurdles in reaching set targets?

Once the evaluation results are clear, the dissemination process requires attention. Various dissemination channels are feasible depending on the scope of the project and the objective of the dissemination. First and foremost, a sharing at the community level and among stakeholders of the value chain is essential. Those involved or indirectly impacted by the chain development need to be aware of the overall results and learning to take up ownership. Policy briefs and larger meetings with government representatives should be considered for stronger public and institutional involvement. Finally, the experience should be captured for a wider audience in the form of a video documentary, brochures, or articles.

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Acronyms and Abbreviations

CHT	Chittagong Hill Tracts
DIIS	Danish Institute for International Studies
FUG	forest user group
GTZ	German Technical Cooperation
HKH	Hindu Kush-Himalayas/n
ICIMOD	International Centre for Integrated Mountain Development
IFAD	International Fund for Agriculture and Development
LFUG	leasehold forestry user group
MAP	medicinal and aromatic plant
MFS	Mountain Forum Secretariat
NGO	non-government organisation
NTFP	non-timber forest product
ODI	Overseas Development Institute (UK)
PPP	public-private partnership
SNV	Netherlands Development Organisation
VC	value chain
VCA	value chain analysis
VCD	value chain development

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