ICIMOD Working Paper 2016/1

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FOR MOUNTAINS AND PEOPLE

Pro-poor and Climate Resilient Value Chain Development

Operational Guidelines for the Hindu Kush Himalayas

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About ICIMOD

The International Centre for Integrated Mountain Development (ICIMOD) is a regional knowledge development and learning centre serving the eight regional member countries of the Hindu Kush Himalayas (HKH) – Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal, and Pakistan – based in Kathmandu, Nepal. Globalization and climate change are having an increasing influence on the stability of fragile mountain ecosystems and the livelihoods of mountain people. ICIMOD aims to assist mountain people to understand these changes, adapt to them, and make the most of new opportunities, while addressing upstream and downstream issues. ICIMOD supports regional transboundary programmes through partnerships with regional partner institutions, facilitates the exchange of experiences, and serves as a regional knowledge hub. It strengthens networking among regional and global centres of excellence. Overall, ICIMOD is working to develop economically- and environmentally-sound mountain ecosystems to improve the living standards of mountain populations and to sustain vital ecosystem services for the billions of people living downstream – now and in the future.

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Pro-poor and Climate Resilient Value Chain Development

Operational Guidelines for the Hindu Kush Himalayas

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Executive Summary

An overwhelming majority of poor people in the Hindu Kush Himalayas (HKH) live in rural areas and depend heavily on agriculture and nature-based goods and services, including forests and non-timber forest products (NTFPs). In India alone, 270 million people depend directly or indirectly on NTFPs, including medicinal and aromatic plants (MAPs). However, because of their remoteness and isolation, mountain communities face formidable challenges in tapping opportunities brought by markets and globalization. For example, in India, despite the significant role of NTFPs in supporting rural livelihoods, the people who collect and process NTFPs receive very little income, even sometimes less than they would earn from wage labour.

Mountain communities across all countries of the HKH often depend on middlemen to sell their produce (mostly in a raw or unprocessed form). Smallholder farmers and NTFP collectors in particular tend to be in a weaker position for negotiating a fair return. They get lower returns as a result of inadequate access to financial resources, farm inputs, technology, training, research, and advisory services, and this is compounded by poor governance systems and poor linkages between the actors in the value chain, as well as poor basic infrastructure such as roads, transport, markets, and communication.

Thus, understanding how markets function and how to engage in the marketplace is very important to bring mountain communities out of poverty. It is necessary to identify, quantify, and meet the requirements of customers, and to design interventions that help the mountain poor by including new innovations that can increase profit margins (i.e., by adding value to products and services, bringing processing activities closer to rural sources of produce, introducing new technologies, and improving business linkages).

The value chain development approach enables farmers and development workers to understand the entire market system and identify leverage points along the chain that offer opportunities for farmers to improve market linkages and increase their share of benefits and income. This paper presents operational guidelines for pro-poor and climate smart value chain development that provide practical tools for development practitioners to overcome value chain constraints and seize opportunities in a sustainable manner and to provide long-term benefits to mountain communities. In addition to improved competitiveness and income distribution, which are core features of value chain development, ICIMOD's approach emphasizes inclusiveness, mountain specificities, and climate change perspectives to achieve a balance between the pro-poor and pro-growth aspects of the value chain.

The publication is organized into three sections. The first highlights the relevance of the value chain development approach in the Hindu Kush Himalayan (HKH) region and sheds light on the aim of the publication. The second describes the key principles, strategies, and approaches for value chain development of mountain products and services. The four key principles suggested in the guideline are 1) ensuring sustainable management of farm and off-farm based resources, 2) equitable benefits, 3) do-no-harm, and 4) valuing traditional knowledge. The major strategies are customizing the value chain approach to the mountain context, looking at value chains from the perspective of climate change, mainstreaming gender in the value chain, using value chains as an entry point to address systemic constraints, and engaging the private sector in value chain development.

The final section describes the process and steps, and presents specific tools for value chain development. It presents a systematic process for applying mountain specific development tools and methodologies with five stages and ten steps, from the selection of products and services for value chain development to analysis of the chain, identification of leverage points, drawing up of a strategy and facilitating implementation, and monitoring and evaluating the interventions. A number of examples are provided that illustrate identifying, assessing, and strengthening business relationships to achieve increased competitiveness in the chain and fair distribution of income among the many actor involved.

Value chain of bamboo: From nursery to end market

Market orientation

Income distribution

Introduction

Pro-poor value chains in the HKH context

Poverty and vulnerability are widespread in a large part of the Hindu Kush Himalayan (HKH) region. Alleviating poverty has remained a major challenge, particularly in the mountains. Poverty analysis shows that about a third of the population in nearly all of the HKH countries live in absolute poverty (Hunzai et al. 2011). Poverty is more severe and deep in the mountain areas of these countries than in the plains (by approximately 5% on average) because of biophysical and socioeconomic specificities of mountain areas (Rasul et al. 2016). An overwhelming majority of the poor in the HKH live in rural areas and depend heavily on agriculture and nature-based goods and services, including forests and non-timber forest products (NTFPs). In India alone, 270 million people depend directly or indirectly on NTFPs, including medicinal and aromatic plants (MAPs), leaves, fruits, seeds, resins, gums, bamboos, and canes (Rasul et al. 2008). The great diversity offered by the conditions in the high mountains and mid-hills (biodiversity, climate, topography, culture) gives these areas a comparative advantage for producing a variety of niche products both for local consumption and for export. But because of the remoteness and isolation, mountain communities face numerous challenges in tapping opportunities offered by globalization and market integration. In mountain areas land is often marginal, arable land is limited, and farms are fragmented, thus mountain farmers find it difficult to realize economies of scale. There are high fluctuations in yield as a result of climate variability and change, and both this and the price volatility of farm inputs put mountain farmers at risk. In contrast, farmers in the plains tend to have larger and more accessible landholdings and are better able to purchase inputs competitively and demand better prices for their produce. Farmers often depend on middlemen to sell their produce, and mountain farmers in particular tend to be in a weaker position for negotiating a fair return. They get lower returns as a result of inadequate access to financial resources, farm inputs, technology, training, research, and advisory services, and this is compounded by poor governance systems and poor linkages between the actors in the value chain, as well as poor basic infrastructure such as roads, transport, markets, and communication.

The mountain context in which farmers and service providers operate is challenging in terms of both 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. Although there is a good demand in national and international markets for mountain products such as medicinal and aromatic plants, spices, nuts, temperate fruits, and honey, the profit share is mostly captured by those working towards the end of the marketing chain, since processing, packaging, and branding is mostly done in urban areas and in the plains.

The changing global context, with increased market integration, increasing migration for work, climate change, and other drivers of change means that even success in the marketplace is becoming more important for livelihood development. There is increasing competition from around the world, and mountain people, mostly smallholder farmers, are not just competing with their neighbours for local

Box 1: **What is a value chain?**

A value chain encompasses the full range of activities and services required to bring a product or service from its conception to sale in its final markets – whether local, national, regional, or global. The term 'value chain' refers to the fact that value is added to products and services as they pass from one link in the chain to the next through the combination with other resources, for example tools; human resources, knowledge, and skills; other raw materials; or preliminary products (ILO 2006). From the institutional perspective, a value chain can be defined as the organizational arrangements linking and coordinating the actors working at different points along the chain (Kaplinsky 2004). Laws, rules, regulations, policies, international trade agreements, and social norms and customs all contribute to this institutional environment, as do public goods such as infrastructure, research, extension, price information systems, and business development services (Haggblade et al. 2012). The idea of a value chain is also associated with the concept of governance, which is of key importance for those researchers interested in the social or environmental facets of value chain analysis (M4P 2008)

markets, but also with farmers from other countries. For example, in Kathmandu the markets have apples from China, potatoes from Bhutan, and cooking oil from Canada. A recent study from the McKinsey Global Institute (MGI) showed that the value of globally traded goods grew from 4.4 to 17.8 trillion dollars between 1980 and 2012 (MGI 2014). More than half of these traded goods are typical value chain goods: primary resources and intermediate products. The value of traded goods is expected to triple by 2025 (MGI 2014). Thus understanding how markets function and how to engage in the marketplace is becoming a vital skill. It is necessary to be able to identify, quantify, and meet the needs, wants, and desires of customers – the people who create market demand and who are the end users of the products and services. And it is important that interventions aiming to help the mountain poor – by bringing new innovations that can increase profit margins (through adding value to products and services, bringing processing activities closer to rural sources of produce, introducing new technologies, improving business linkages, and others) – have a good understanding of the target market before engaging in upgrading activities with producers and processors.

The changing context doesn't only bring challenges: it also opens up opportunities for mountain products and services. The emerging markets for safe and hygienic food products, fair trade goods, ecotourism, and the green economy open considerable opportunities for mountain people. At the same time, rising temperatures, changing rainfall patterns, and more severe weather events are leading to unpredictable fluctuations in production and demand-supply conditions, and call for adjustment of production practices. The changing climate, global trade integration, and socioeconomic situation call for better ways for mountain people to respond to the changing context and engage with markets. A pro-poor and climate resilient value chain development approach can help bring mountain people out of the poverty trap and build their resilience through connecting smallholder producers with markets. In order to deliver products to a competitive market and increase climate resilience, mountain communities need to build a relationship with agribusinesses and upgrade value chains through market innovations engaging the private sector. This will provide opportunities to create 'win-win' situations and reduce risks for mountain communities, thereby improving livelihoods.

Value chains: An emerging concept for sustainable growth

In recent years, many organizations have used the value chain development approach to promote economic growth (Box 1). These organizations – donors, international organizations, government ministries and line agencies, non-governmental organizations (NGOs), and development banks – believe that by improving the access of the poor to markets, facilitating more effective operation of markets, and promoting the flow of knowledge and resources along value chains to small enterprises and poor producers, the poor will be able to benefit more from domestic and global market opportunities (Humphrey and Navas-Alemán 2010).

The value chain development approach is widely recognized for its ability to link farms and firms in remote regions to growing and emerging market opportunities (Riisgaard et al. 2010). The approach emphasizes the point that one weak link can endanger the overall competitiveness of a value chain. It is an effective method for tracing product flows, showing the stages where value is added, and identifying key actors and their relationships in the chain (Schmitz 2005). Value chain development is regarded as a market-led approach, as it helps satisfy the needs of the end consumer by fostering relationships and building trust among all stakeholders along a particular value chain to coordinate their activities.

Various organizations have formulated approaches for value chain development; however, the interpretations of what the value chain development approach entails – the principles upon which it is based and how these principles are applied – varies (AfE 2014; Stamm and von Drachenfels 2011; Campbell 2008). ICIMOD emphasizes inclusiveness, mountain specificities, and climate change perspectives (Hoermann et al. 2010), while aiming to overcome challenges and harness opportunities that can benefit the rural poor (Stamm and von Drachenfels 2011). In addition to improved competitiveness and income distribution, which are core features of value chain development, the desired outcomes include higher income earnings for poor and vulnerable groups as well as active participation of women and youth (Altenburg 2007).

Operational guidelines for pro-poor and climate resilient value chain development in the HKH region

Although there is a considerable body of literature on value chain development (e.g., AfE 2014), it is not tailored to – or appropriate for – the specific characteristics of mountain areas. Mountain value chains are influenced by a set of mountain specificities which provide comparative advantages, but at the same time present challenges in reaping higher returns. The International Centre for Integrated Mountain Development (ICIMOD) has been working with mountain communities and various partners on different aspects of value chain development for some years. In 2010, Hoermann et al. presented an analytical and strategic framework for integrated value chain development as a tool for poverty alleviation in rural mountain areas. This publication looked at the need to adapt the generic value chain approach to the mountain context and suggested tools to examine the mountain specificities (unique/niche production, limited accessibility, fragility, marginality, and diversity). Some of these ideas were tested in pilot projects as described by Choudhary et al. (2013, 2014). The present publication builds on this previous work to present operational guidelines for pro-poor and climate resilient value chain development in the HKH region.

The operational guidelines aim to strengthen the link between value chain development and activities related to climate change adaptation, gender integration, and private sector engagement that improve opportunities for mountain communities and the ability of smallholder/poor farmers to manage risks and improve livelihoods through better access to the markets. The guidelines focuses on the operational aspects of value chain development taking into account mountain specificities, climate change knowledge, a gender perspective, and the potential for linking the poor to the market and encouraging private sector engagement at all stages, from selection of products or services for value chain development to monitoring, evaluation, and upscaling. Each of the processes and tools presented focusses on analysing the value chain from the point of view of mountain communities, their experience of climate change, and issues of gender, governance, and private sector engagement.

Highlighting local cultures and traditions can help promote tourism

The guidelines are intended to provide development practitioners and institutions working in the field of livelihood diversification and income generation with a practical tool for (1) identifying products and services that offer comparative and competitive advantages to mountain communities, and detailed analysis of their value chains; (2) designing a strategy and implementing interventions that ensure fair distribution of income along the chain, add overall value to the products, support market orientation, strengthen relationships between actors in the chain, and create synergy between support institutions; and (3) bringing innovation closer to pockets of production to add value by improving efficiency (process upgrading), changing structure of the chain (functional upgrading), and/or product quality (product upgrading). The guidelines will increase understanding of the context in which mountain farmers operate and the challenges they face in delivering products to the market, and it will provide a basis for conducting a detailed diagnosis of mountain products and services, identifying leverage points for increased value creation, improving the efficiency of the chain, and ensuring sustainability of the production system. The guidelines will also help in analysing the distribution of profit margins (i.e., what proportion of the profit margin is accrued at which point in the chain).

The principles and strategies suggested can help field practitioners, decision makers, and development planners in streamlining gender and social inclusion, climate change, and the mountain perspective in the process of upgrading value chains with active engagement from the private sector.

The value chain approach focuses on customizing traditional skills and practices to meet market requirements

Key Principles and Strategies for Value Chain Development

These operational guidelines emphasize the specific opportunities arising from the comparative and competitive advantages of mountain products and services, and the challenges arising from mountain specificities. They focus on three dimensions that are important for achieving sustainable and pro-poor growth: improving the competitiveness of the value chain (economic dimension), promoting climate adaptive practices (environmental dimension), and including a pro-poor approach (social dimension). The key principles are as follows:

- **Sustainability:** sustainable management of farm and off-farm based resources while ensuring a viable supply of raw materials (e.g., the demand created for a specific product through value chain development should not lead to overexploitation of resources and increased temptation to supply more using unsustainable practices)
- **Equitability:** selecting sectors, subsectors, or products that offer prospects for value addition and a higher chance of providing equitable benefits (e.g., opportunities to integrate poor and disadvantaged people into the chain, to reduce workloads of women and children and for local value addition close to the production area)
- **Do-no-harm:** giving due consideration to the possible harm that any intervention might do to other livelihood options by conducting a thorough assessment of the local context and livelihood options of target communities before designing value chain development interventions (e.g., mountain livelihoods are dependent on a number of sectors/subsectors; selecting a particular subsector for value chain development should not negatively affect other livelihood options)
- **Valuing traditional knowledge:** combining and utilizing local knowledge and indigenous practices with scientific data for responsible management of resources (making full use of the knowledge and perspectives offered by the communities that are based on locally developed and appropriate practices of resource use and other ways of responding to ecological surprises and managing the ecosystem) (Berkes et al. 2000).

Based on these principles, the value chain approach focuses on two areas:

- Creating value for poor mountain communities so that the poor benefit equally or more than equally from the income generated
- Improving competitiveness so that a greater volume is sold and/or post-harvest value addition and quality assurance lead to a higher end price

The aim is to achieve a balance between the pro-poor and pro-growth aspects of the value chain by targeting interventions that strengthen the relationship between actors at different levels (production, processing, trading). We believe that stronger relationships will help achieve fair distribution of increased income, and will encourage efforts to achieve growth and development. The major strategies of the value chain development guidelines are:

- Customizing the value chain approach to the mountain context
- Looking at the value chain from the perspective of climate change
- Improving participation of the poor and mainstreaming gender in the value chain
- Using the value chain as an entry point to address systemic market constraints
- Engaging the private sector in value chain development

Customizing the value chain approach to the mountain context

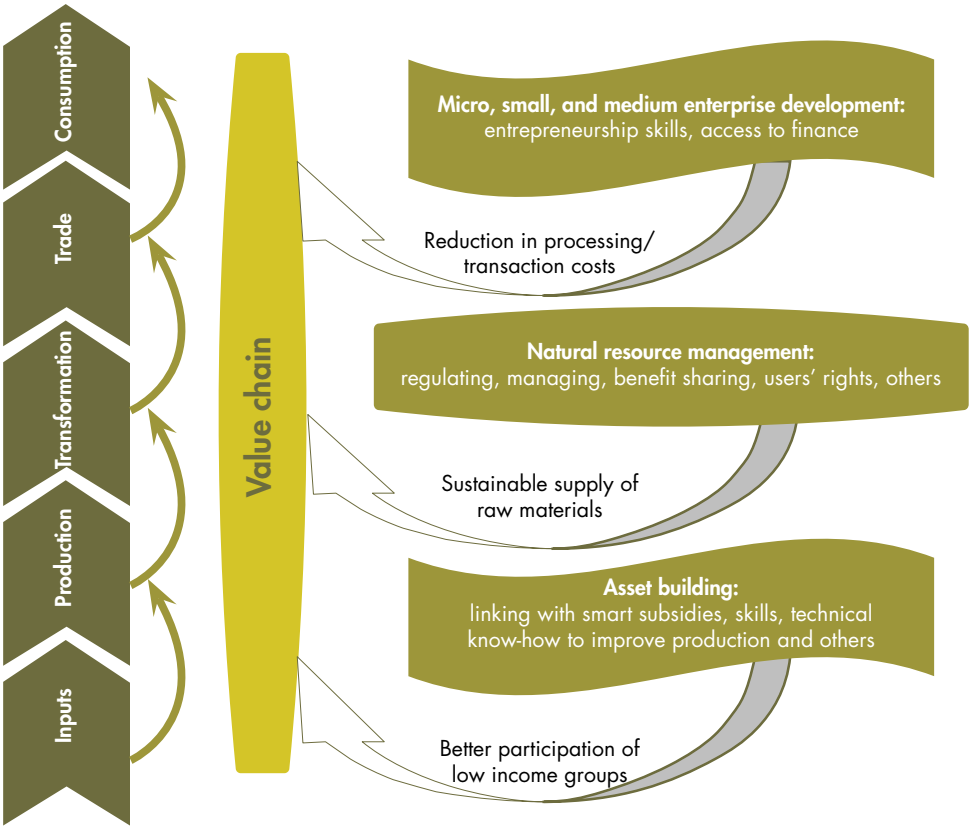
As highlighted by Hoermann et al. (2010) mountain value chains are influenced by a set of mountain specificities that provide both comparative advantages and challenges for reaping higher returns. Specificities, such as the availability of unique and niche products and services and diversity, offer potential benefits for mountain people, while the fragility and marginality of the land and poor accessibility pose problems in exploiting these advantages. Acquiring the product becomes expensive and risky, and at times the transportation costs may be higher than the cost of the product. Moreover, the fragile mountain terrain makes trade unpredictable, with landslides affecting production areas and making roads impassable, and tracks becoming unusable in the rainy season.

There are a number of products with unmet market demands that mountain farmers can produce but cannot deliver to market centres as a result of poor accessibility. For example, close to 95% of respondents in a survey in Merak and Sakteng in Bhutan said they do not sell fresh milk, instead using it to make butter, cottage cheese (datse), fermented cheese (yeatpa), and hard cheese (chugo). This is done to preserve the milk, not because they gain more value from the processed products (Joshi and Gurung 2009). The major constraints in collection and marketing of fresh milk include the small volumes supplied per producer, the pronounced seasonality of supplies, the dispersed and relatively low-income retail markets, and poorly developed transportation systems. When selecting a value chain in mountain areas, it is important to consider shelf life (low perishability) of the commodity and the need for high value with low volume.

Mountain areas have unique and niche products and services that provide them with comparative advantages over the plains. Mountain-specific products such as upland rice, beans, off-season vegetables, nuts, honey, medicinal and aromatic plants, and freshwater fish have some unique attributes in terms of taste, health benefits, shelf life, and availability. Similarly, service value chains such as tourism offer good prospects as they represent a niche element in the form of a uniquely preserved traditional and subsistence-oriented way of life with vast cultural variety. However, these comparative advantages often remain unexploited as the market linkages are very weak.

To connect mountain communities with markets and make value chains work for the poor, it is important to create incentives for participants at different levels along the chain. One way of creating incentives is to combine the value chain approach with development initiatives that have resources to improve skills, establish processing and value adding facilities, and promote production systems. Pilot activities in the HKH region have shown that it is essential to assess the potential for, and limitations to, bringing a value chain to the next stage of growth before selecting products and services for value chain development (SNV Nepal 2012; Choudhary et al. 2013). Depending on the nature of the product, efforts should be made to seek complementarity with other development initiatives, for example development of micro, small, and medium enterprises (MSME), natural resource management, and asset building for value chain upgrading. Figure 1 shows how these can be linked. Value chain development is an applicable approach for subsectors or products that include three or more of the following: producers, collectors, processors, distributors, wholesalers, retailers, and consumers. It works well if the minimum conditions that enable the poor to participate in commercial markets are fulfilled (such as access to information, experience in transactions, existence of business relations, sizeable production, and access to loans). If certain conditions are missing, the value chain approach should be included as part of a bigger initiative. In situations where farmers produce a variety of products mainly for their own consumption or sell their produce directly to consumers (with no one else involved), value chain development is probably not appropriate as a stand-alone approach. Additional support will be needed to integrate communities into the value chain, for example grants to encourage development of MSMEs to establish processing and value adding facilities; skills and technical training to farmers to improve yield and quality; and knowledge, awareness, and access to services for sustainable management of resources (Figure 1).

Figure 1: **Combining value chain development with other approaches**



Linkages to high-end markets will help realize the untapped value of high-value niche products like soap nut

Looking at value chains from a climate change perspective

It is becoming increasingly important to take climate change into account when considering approaches aimed at improving income and employment in poor and vulnerable communities in mountain areas. Poor mountain people are likely to be among those most affected by climate change. Agricultural and forest products, the source of most livelihoods, are highly exposed to climate change risk. Most projections indicate that climate change and climate variability will increase the risks in agricultural production systems affecting those people reliant on agriculture for their livelihoods (Su et al. 2013). The effects of climate change on agricultural productivity and production stability are also likely to result in an increase in food prices in areas that already have high levels of food insecurity, and thus reduce the standard of living of families already living in poverty (MOAD 2011). Climate change is expected to reduce productivity to even lower levels and make production more erratic in many areas of the world where agricultural productivity is already low and there are limited means for coping with adverse effects (Stern 2006). Long-term changes in the patterns of temperature and precipitation are expected to shift production seasons, change pest and disease patterns, and alter the crops that can be grown. This will affect production, prices, incomes, and ultimately livelihoods (MOAD 2011). Climate change is a 'threat multiplier' for smallholders: it will magnify traditional risks and lead to new sources of risk. However, the potential impact of a changing climate on long-term trends is still unclear and requires further research (Stern 2006).

The potential effects of climate change need to be taken into account in value chain development. The value chains need to be responsive to these and other changes – climate smart and climate proof. It is important to consider the impact of climate change from the selection of a value chain to the design of upgrading and development of strategies, and to plan proper adaptation measures. Table 1 shows a matrix that can be used as guidelines for developing climate adaptive planning for value chain development work, particularly in the area of agricultural and forest products. It's important to look at value chain functions and then integrate these into upgrading, as the expected return on investment largely depends on the chain's vulnerability to water (too much, too little), energy (old versus new/improved sources), soil nutrients, weather, and knowledge. Climate smart factors need to be integrated during the value chain development process to ensure the value chain is sustainable and resilient to external threats.

Table 1: **Matrix for developing climate smart planning for value chain development**

Elements of climate smart planning	Key questions to be answered
Energy	Which energy technologies are currently in use (e.g., for pumping water, drying, storage)? What opportunities are available for promoting energy efficient technologies (e.g., improved stoves for drying cardamom, solar driers for apple chips)? Who can provide energy technologies and services and how can service provisioning be strengthened?
Water	What are the effects of water in the selected value chain? How can availability be ensured? Which technologies can be provided (e.g., for water retention, water storage, control of water runoff, irrigation)?
Soil/soil nutrients	What are the current practices related to soil? What interventions can be made to maintain soil health and improve land management?
Weather	What changes are taking place in crop phenology and the crop cycle? What interventions can be made to cope with changes in weather and climate?
Knowledge	Do the actors in the value chain share information and knowledge? If yes, what mechanisms exist? What is the governance structure, relationship, and level of trust between actors? How can we facilitate learning, networking, and value chain linkages (e.g., buyer-seller meetings, market information, access to finance and other business development services)?

Improving participation of the poor and mainstreaming gender in the value chain

Pro-poor value chain development refers to interventions that aim to overcome challenges and seize opportunities, which can benefit the poor, particularly smallholders and disadvantaged groups. Empirical evidence shows that not all value chain development initiatives lead to pro-poor and sustainable growth. The initial investment, type of technologies, and level of skills and exposure determine the participation of actors at different points in the value chain. For development organizations it is important to select value chains that require little initial investment, have scope to apply traditional skills and locally available technologies, and offer prospects for upgrading poor and low income groups, as upgrading adds value by improving efficiency, quality of the product, and/or structure of the chain. The following questions need to be thoroughly discussed to make a value chain pro-poor without hampering its competitiveness:

- To what extent will poor (smallholder, low income, and disadvantaged groups) participate in the value chain?
- Will they be willing to add value by upgrading processes, functions and structures of the chain?
- Will they be able to capture the value created in the chain?

Development organizations that work with value chains are increasingly concerned with achieving gender equal outcomes; nevertheless, gender is not always mainstreamed in the analysis, design, and impact assessment during value chain development (Laven and Verhart 2011). ICIMOD believes that interventions are most successful when they take into account the points of view of everyone in society, regardless of gender, caste, or ethnicity. Gender mainstreaming is understood as the integration of a gender perspective and gender analysis into all stages of design, implementation, and monitoring of projects, programmes, policies, and planning at all levels, and is a hallmark of ICIMOD's work to achieve sustainable results (ICIMOD 2012).

Climate smart practices, like water harvesting, biocomposting, intercropping can help make value chains more resilient

Table 2: **Key areas to be looked at from a gender perspective**

Gender role	Look at the division of labour between women and men within the value chain: where are women and men active in the chain?
Access to resources	How are resources shared/distributed according to laws/regulations and norms and values between women and men?
Control over benefits	Look at women's and men's roles in the management of the chain (horizontal integration) and the power dynamics
Influence on enabling factors	How can women and men leaders influence policy making and legislation to promote their economic rights and make the overall environment more conducive to gender equality?

Adapted from SNV 2011

In rural communities, women play an important role in both family affairs and working on the farm. However, their inputs are often undervalued, they are underrepresented in decision making, and often do not receive equal benefits (SNV 2011). Hence, value chain facilitators need to pay special attention to the values and needs of women and other vulnerable groups within a community. The value chain development approach should not only lead to increased competitiveness of a subsector or income generation, it should also seek to promote core values of gender equity and social responsibility.

Analysing a value chain with a gender perspective means facilitating the collection and use of data, both quantitative and qualitative, that is disaggregated by gender based on a knowledge of gender theories. The data should provide understanding of the differences in men and women's roles, activities, needs, and interests in a given context, and enable identification of gender-based differences in access to resources and control over benefits and prediction of how different members of households, groups, and societies will participate in and be affected by planned development interventions. It should also help in investigating the root causes that perpetuate gender inequality and discrimination and drawing relevant conclusions that can inform action (SNV 2011). When analysing a value chain, it is important to know who decides what is to be produced, who is responsible for sales and how income is used, and which technologies are applied, who uses them, and whether they will reduce women's drudgery. The matrix shown in Table 2 can be used to mainstream gender in value chain development.

Agricultural advisories and market information systems help farmers plan better

Using value chains as an entry point to address systemic constraints

Value chains operate as a part of an entire market system, which comprises a number of functions and players. To improve the competitiveness of selected value chains and make growth meaningful for poor/rural producers working at the lower end of the chain, the chain must be influenced at all levels: (1) the core functioning of the chain; (2) institutions, support services, and infrastructure; and (3) the enabling environment, policies, and regulations.

ICIMOD together with its national implementing partners seeks to address the root causes in the system and to stimulate markets in ways that benefit the poor. To do this, it considers the active involvement of all players in the market. These include all the people and enterprises performing the basic functions of a value chain: those who become owners of the raw, semi-processed, or finished product; the associations, networks, or organizations who provide support services and represent the common interests of the participants in the chain; information, financial, and other business development service providers; and national government institutions, regional organizations, and international bodies who focus on setting standards, dealing with rules and regulations, and creating an enabling environment.

ICIMOD facilitates its partners to carry out detailed diagnoses of a value chain and the market system in order to understand the root causes that block development, and identify triggers to tackle these root causes and bring about change. It also helps explore ways to bring in innovations (do different things/find different ways of doing things), build new relationships, and facilitate upgrading of the value chain (process, function, product upgrading).

Engaging the private sector in value chain development

Collaboration between public agencies and the private sector is a basic principle in value chain development. Value chains are made up of private enterprises, and upgrading is achieved through their decisions and investment (GIZ 2007). Therefore, any value chain development activity has to address private operators, directly or indirectly. Private enterprises have a commercial interest in collaborating in upgrading a value chain because the improved business linkages and overall performance of the whole chain lead to increased net benefit. Since private companies are close to the market and uniquely positioned to identify barriers to trade, they can be good partners for lobbying for improved regulations that foster growth and improve the competitiveness of the chain. The entrepreneurial capacities, innovations, financial resources, ideas, networks, business models and continuous struggles (energy) to make things happen on the ground are key attributes and forces that foster productivity and profitability. There are number of examples showing how the private sector has helped improve a value chain by supporting producers in different ways, for example by providing access to information on market prices and weather patterns, and providing business embedded services such as agro-inputs to smallholder farmers (Box 2).

The private sector is considered to be the main engine of economic growth, and the way the private sector

Box 2: **The role of the private sector in improving access to agri-inputs (quality seeds)**

In 2008, Katalyst – a multi-donor funded market development project – initiated the concept of 'mini seed packets' for small farmers by engaging with a seed company to include mobile seed vendors (MSVs) in the distribution channel. The aim was to provide access to good quality seeds (high yielding and hybrid varieties) for small and poor farmers in rural Bangladesh. The vendors, who had previously sold inferior quality/non-packed seeds, began offering quality seeds. Small farmers began purchasing from open packets of MSVs, reinforcing the idea of a market for mini-packets. Companies were still reluctant to adopt the concept, but market research conducted by Katalyst clearly identified the demand-supply gap for mini-packets. Katalyst partnered with two leading seed companies to introduce mini-packets for 35 varieties. They contained a small quantity of seeds sufficient for around 0.15 ha of land at affordable prices ranging from 13 to 25 US cents. The number of beneficiary households grew from 236,000 to 339,000 and 458,000 in three subsequent seasons to 2012. The impact was equivalent to the production of USD 14 million worth of additional vegetables; 40% of farmers used mini-packets for home gardens, with over 100,000 women beneficiaries. Even though it took nine months for the companies to break even, within three months they had started investing in scaling up the product line. This created a huge pull effect throughout the distribution channel encouraging other seed companies to sell smaller packet sizes.

Source: www.swisscontact.org/fileadmin/media/Medienmitteilungen/Katalyst_DACPrize_flyer_01.pdf

develops also has a strong bearing on the pattern of growth, influencing whether growth is broadly or narrowly based and whether it is more or less inclusive of the poor (OECD 2006). For the HKH region, active participation and ownership among the private sector is vital, not only to bring unique and niche products to end markets, but also to create an enterprising environment for communities to be part of long-term business partnerships for productivity, profitability ensuring environmental and responsible gains.

Development organizations like ICIMOD have a specific interest in developing value chains in ways that help to increase income and create jobs for people in rural areas. Quality assurance, particularly in food production, is one of the key areas that require the active engagement of the private sector. The private sector is increasingly involved in providing business embedded services to producers and others to safeguard quality in order to meet the standards of supermarkets and importers. Quality in this sense includes intrinsic characteristics of the product, such as colour, taste, and tenderness, and extrinsic characteristics of the process, such as organic or fair trade production methods.

Community risks can also be seen as business risks because communities provide key resources and services to companies: they not only supply raw materials and a workforce to companies and agribusinesses, they also work as distributors and consumers of processed products (SNV and WBCSD 2008). There are a number of examples that reveal how the private sector has helped improve competiveness with a strong pull effect of integrating poor people in the value chain. Private companies keep improving and adjusting their own production, marketing, and managerial operations during the process of upgrading a value chain. Particularly advanced companies engage in product innovation and take over the investment cost and risk of pioneering new business models, products, or technologies. They do this to improve their own competitiveness, but at the same time set an example for others to copy. The private sector can make an important contribution to advancing sustainable development by bringing low-cost innovations to the market (e.g., solar panels and energy-efficient LED lamps that enable children to do their homework at night; smokeless stoves that support better health; and mobile phone and Internet applications that help small farmers get access to better information and prices). But care needs to be taken as there are also examples of monopolistic exploitation by the private sector with, for example, breaching of buy-back agreements or false promises made to encourage farmers to grow specific crops purely to gain sales of seeds and tools and to increase dependency. For the private sector to deliver pro-poor growth, appropriate safeguard mechanisms are required to protect the interest of farmers from possible exploitation (OECD 2006). Table 3 shows some of the ways in which the interests of businesses and the interests of the producer community can both be met to support the development of a value chain and provide mutual benefits.

Bulking up and grading high-value products can create economies of scale

There are a number of ways to engage the private sector as a development partner to support economic improvements for rural producers and others working at of the start of a chain (Box 3). ICIMOD in its efforts to increase benefits to rural mountain communities promotes partnership and engagement with the private sector, especially with value chain actors such as farmers' groups and cooperatives, local traders, processors, and service providers such as savings and credit cooperatives, and chambers of commerce and industry. The aim is to involve the private sector in designing value chain development interventions; conducting action research to test innovative ideas, tools, technologies, and practices; piloting of demonstrated practices; and facilitating policy dialogue. The main thrust of private sector engagement is to improve the access of smallholder farmers to new technologies, markets, and finance. Connecting smallholder farmers with new technologies to enhance production is a market led development opportunity. ICIMOD as a knowledge centre strives to provide evidence-based information on the specific characteristics of mountain products to the private sector, in the hope that they will be interested in exploring these high-value products which can achieve a good price in national and international markets.

Table 3: **Facilitating pro-poor business in value chain development**

Business interests	Match making between business and community interests	Community interests
• Security of supply • Traceability and quality control of raw materials • Better relations with the community to meet production demands and long-term business sustainability • Lower transaction costs • Shared risks • Positioning in fair trade	• Facilitation of mutually beneficial contracts (e.g., buy-back agreements, contract farming, shared cropping) • Supporting embedded services from agribusiness for the community • Facilitating agribusiness investment for value chain development (e.g., establishing aggregation points, warehouses, processing units) • Promotion of good agricultural practices • Technical assistance to help farmers meet quality standards	• Assured market • Compliance with quality standards • Increased yields and reduced cost of production • Correct use of inputs and farming methods to protect long-term production viability • Collective supply • Lower transaction costs • Shared risks • Easy access to niche markets

Box 3: **Promising ways to encourage private sector engagement in value chain development**

There are a number of ways to attract private sector investment for value chain development and foster cooperation in areas of mutual interest to create a win-win situation. ICIMOD uses the following approaches:

Sharing research findings on unique attributes and characteristics of products and services: Private companies are tempted to harness opportunities if they are well informed about the comparative advantages of particular products and services. As a knowledge networking organization, ICIMOD plays a pivotal role in generating data and information on the attributes of mountain products and services and sharing this with private companies, thereby encouraging them to bring investment closer to pockets of production.

Facilitating buy-back arrangements: ICIMOD and its national partners help to bring buyers and suppliers together, facilitate dialogue, and encourage them to enter into contractual arrangements. This is particularly important in situations where small-scale farmers or their groups and cooperatives are not in a position to take business risks because of high entry and exit barriers, unpredictable rules, and volatile markets. In contrast, the private sector can take risks and invest in a business if the supply of products is guaranteed.

Expanding the supply base: The scattered nature of production and low-scalability are factors that make private companies reluctant to do business with mountain communities. To address this, ICIMOD has helped individual producers organize into groups or cooperatives and encouraged them to join hands to provide a collective supply of a product with specific quality to the buyers. This encourages the private sector to invest in setting up infrastructure close to pockets of production. By establishing warehouse and other storage facilities, and operating processing/product diversification facilities, the private sector can build long-term relationships with the suppliers to ensure sustainability of the business and mutual benefits.

Promoting business-embedded service provisions: ICIMOD believes that if the private sector is involved in designing and implementing action research and pilot projects, they can customize their service packages to respond better to the needs of smallholder farmers. By running agro-vet services, providing technologies, sharing information, and providing transportation and financial services to small farmers, the private sector can contribute to value chain development while operating a profitable business.

Quality improvement: The increased awareness of consumers about food safety and hygiene and willingness to pay more for green products which are labelled and packaged in line with globally recognized environmentally friendly practices, such as Forest Stewardship Council (FSC), Good Agricultural Practices (GAP), Fair Trade Labelling Organisation (FLO), and International Federation of Organic Agriculture Movements (IFOAM), offer opportunities for the private sector to create investment and incentives for smallholder farmers. ICIMOD aims to strengthen horizontal and vertical linkages between actors working at different points in the value chain, which helps create awareness about quality and facilitates the implementation of quality guidelines.

Supporting a business enabling environment: International and regional trade agreements and the national policy and regulatory environment are critical to the functioning of markets and enterprises. Poor local government operations and poor enforcement of legal and regulatory regimes increase transaction costs and risks and limit investments in relationships and upgrading. In contrast, conducive local and regional policies can provide opportunities for private sector growth. ICIMOD as an intergovernmental organization contributes to the creation of a business enabling environment through dissemination of evidence-based information.

Bionutrients and biopesticides can be applied using local knowledge and low-cost materials

Mountain communities must work together to improve production systems

Key Steps in Value Chain Development

The operational guidelines for value chain development has five stages divided into ten steps as described in the following sections and summarized in Table 4. The major thrust of the approach is to make value chains more pro-poor for poor smallholder farmers, women, and youth, while maintaining competitiveness – in other words balancing competitiveness and equity issues (Altenburg 2007) – and ensuring that the value chains are climate resilient. The desired outcomes of a pro-poor value chain approach typically include higher earnings for poor and vulnerable groups and higher participation of women and youth (SDC 2008). Thus, the approach focuses on those value chains which offer the best prospects for involving poor and vulnerable groups in adding value, and include interventions that overcome challenges and seize opportunities that can benefit the mountain rural poor (Stamm and von Drachenfels 2011).

Selection of products/services for value chain development (Stage 1)

The first stage in designing a pro-poor value chain is to select promising targets by identifying areas where opportunities exist for large numbers of poor people to compete effectively in the growing chain. First, a long list of potential products and services is developed, which is then reduced in a second step by setting priorities.

Step 1: Generating a long list of products and services

Participatory appraisal is used to generate a long a list of potential products and services (up to ten) by comparing their relative advantages (Box 4). The emphasis should be on the niche or unique characteristics that make the mountain product or service more competitive. Growth potential is the most important criterion as it is a necessary precondition for sustainable poverty reduction. Unless the value chain has the potential to generate greater revenue (greater volume sold and/or higher value products), there will be no additional income to be distributed (GIZ 2007). The growth potential of value chains that are operated by smallholder farmers and micro, small, and medium enterprises (MSMEs) can be seen in various ways, such as an under-supply of raw materials, import substitution, existence of niche markets, or growing demand. Further, it is important to look at products that are less vulnerable to climate risks (see Table 1), and offer prospects for gender integration (see Table 2) and engagement of the private sector (see Table 3).

One tool that can be used in this step is the 'attractiveness' matrix. This shows the relative rating of each value chain (high, medium, low) against two selection criteria. The example in Table 5 shows the rating of various fruits and vegetables in eastern Bhutan according to the selection criteria, 'potential

Box 4: **Participatory appraisal for value chain development?**

Participatory appraisal is a broad empowerment approach commonly used by non-governmental organizations (NGOs) and other agencies involved in development as a way of incorporating the knowledge and opinions of people in target communities in the planning and management of projects. Visual methods are generally used, which makes it easier for less practised people to voice their opinions. The participatory appraisal should be carried out with different groups (men, women, smallholders, landless, different social groups, and so on) to gather information on the basis of their present livelihoods, locally available resources, new possibilities, existing chains that provide insufficient benefit, limiting circumstances, favourable circumstances, and other information relevant for identifying potential products and services. Some of the common participatory tools are: (1) Venn diagram for understanding influence of different actors and depicting relationships, (2) seasonal calendar to state which activities are conducted in which months, (3) dependency matrix for mapping the resources on which the livelihoods of target communities are dependent. The results can be used to diagnose competitive advantages and disadvantages of the specific location, and potential products and services can be further discussed with the local community to evaluate the practicality of the suggestions and potential for harnessing local advantages.

unmet market demand and growth' and 'potential to increase rural income'. Value chains in the high/high or high/medium boxes are given higher priority. The information from the participatory appraisal is used to prepare the matrix. The products and services rated most attractive should be further assessed in terms of the mountain specificities – unique/niche production, inaccessibility, fragility, marginality, and diversity – to identify the unique attributes as mountain products that will give them a comparative advantage, as well as potential challenges (Hoermann et al. 2010).

Table 4: **Key steps in the development of a pro-poor value chain**

Stage	Step	Action	How
Selection of value chain	Step 1	Generate a long list of value chains for consideration using participatory appraisal (prepare a menu of products and services that mountain communities can offer to the market)	• Understand the options on which livelihoods of mountain communities depend • Prepare a resource map (what are the major sources of livelihoods?) • List the relative advantages of products and services (preference ranking) • List their unique mountain characteristics • Evaluate the scope to satisfy customers (what volume, quality, and specifications are required by the buyers?)
	Step 2	Identify, with justification, the most promising value chains. From the list, select the value chains for which there is most demand and that have potential to enhance income and build resilience.	• Understand the comparative and competitive advantages; market requirements; extent to which each value chain offers scope for building resilience, improving livelihoods, and reducing risks; and whether the value chain is climate resilient (considering the five major strategy points as outlined in Section 2 above)
Analysis of value chain	Step 3	Map the big picture: actors involved in the value chain, the links between them, demand and supply data, and other pertinent context information	• Develop a value chain map depicting functions, actors, and flow of products • Map support service providers as well as other supporting agencies and development partners, and their roles
	Step 4	Carry out a detailed diagnosis of specific dimensions of the value chain	• Understand value addition at each point in the chain, how income is distributed (how expenditure flows through the chain and income can be increased at points in the chain closer to production), the relationship among actors, governance structure, and so on
	Step 5	Identify where in the value chain to seek change based on strengths, weaknesses, opportunities, and threats	• Identify potential leverage points, drawing on the results of steps 1 to 4, as a basis for steps 6 to 8, focus on priority areas
Identifying leverage points for interventions	Step 6	Generate a long list of interventions to address the causes of constraints and to harness opportunities	• Think laterally and rationally in generating the range of possible interventions
	Step 7	Prioritize interventions on the basis of their impact and feasibility	• Generate an intervention shortlist (identify solutions to address critical bottlenecks hindering growth, actors to implement interventions, and anticipate changes in the chain to achieve impact)
Drawing up strategy and plans and facilitating implementation of interventions	Step 8	Draw up a strategy and plans	• Set operational and upgrading objectives, and package of selected interventions for implementation
	Step 9	Facilitate the effective implementation of value chain upgrading strategy (clarifying roles, design a process, and set entry and exit points)	• Facilities the application of a climate adaptive process from production to packaging • Strengthen vertical and horizontal linkages • Foster public-private partnerships • Improve access to information, finance and other support services • Assessing needs and the responsiveness of public service providers • Build capacity of value chain actors/supporters and enablers • Facilitate development of standards and quality assurance • Foster a coherent value chain promotion policy
Monitoring and evaluation and scaling up	Step 10	Formulate the impact hypothesis (theory of change), manage results, and develop a scaling up strategy	• Ensure that the project is moving in the right direction, and results (good practices) are replicated and/or continued by local stakeholders on their own.

Table 5: **Attractiveness matrix for fruits and vegetables in eastern Bhutan**

Potential to increase rural income (involvement of smallholders, MSMEs)				
	High		Radish	Most attractive: Potato, orange, chilli
	Medium	Peach, plum	Bamboo shoot, fern, asparagus	Cauliflower, cabbage, broccoli, kidney beans (rajma)
	Low	Least attractive: Pumpkin, green spinach (sag)	Ginger, garlic, onion	Pear, persimmon, passion fruit
		Low	Medium	High
		Potential market demand/growth		

Source: Joshi and Gurung (2009)

Step 2: Identifying the most promising products and services

The second step is to identify the most promising value chains – those that offer the best prospects for further development – by looking at the scope for the following:

- Adding value to the product in rural areas (potential for product improvement and innovation)
- Additional employment in rural areas (especially of youth and women)
- Bringing processing activities closer to rural sources of production through engagement of the private sector
- Linking with other priority value chains, for example linking tourism with horticulture
- Increasing exports of value added (processed) niche products
- Growing market opportunities (positive growth trend for the value chain, increased demand, favourable market conditions, comparative and competitive advantages)
- Poverty reduction potential:
  - involvement of poor entrepreneurs and smallholders in the value chain
  - low entry barriers for small-scale and poor entrepreneurs (small scale of production, low start-up costs, not requiring major capital investment, using low-tech skills)
  - production using services, raw material, and skills that are available locally
  - labour-intensive technology
  - in locations where poor people live
  - in line with livelihood conditions (year-round income, using family labour, rapid returns, contributing to food security, keeping the environment intact, not reducing availability of clean water)

Stakeholders must be involved throughout the development of a value chain, including identifying which high-value products to promote

Table 6: **Scoring and ranking value chains**

Criterion	Weight (%)	Sub-criteria	Weight (%)	Proposed value chain				
				VC1	VC2	VC3	VC4	VC5
Growth potential and competitiveness	30	% increase (growth) in production (last five years)	40					
		% of farm produce sold at market (commercialization)	60					
Poverty reduction potential and social benefits	30	% HHs engaged in VC	30					
		% poor HHs engaged in the VC	30					
		% of total employment generated by the VC	20					
		% women's participation in the VC	20					
Prospect of success	20	Policy environment[a]	30					
		% coverage by public sector service providers	20					
		Sector data availability[b]	10					
		Role of public sector R&D institutions[c]	10					
		Own initiatives of VC partners[d]	10					
		Readiness for change[e]	10					
		Urgency of interventions[f]	10					
Programme related aspects	20	Relevance to the organizational objectives	60					
		Regional coverage	40					

VC = value chain; HHs = households

[a] very favourable 100; favourable 70; neutral 40; unfavourable 0

[b] readily available 100; available 70; not available locally 40; not available at all 0

[c] R&D institution exists locally 100; national R&D institution 50; no R&D 0

[d] highly motivated VCA operators 100; moderately motivated 70; poorly motivated 40; not motivated 0

[e] excellent linkages 100; good linkages 70; functional linkages 40; no linkages 0

[f] very urgent 100; urgent 70; not urgent 40; very long term 0

It is important to have a structured method for determining which value chains will be selected from the list of products and services, even though selection is an inherently subjective process. ICIMOD uses a short-listing matrix and ranking tool; Table 6 shows an example. The criteria for selection of value chains may vary depending on the organizational goal, scope of programme or project, and local context. The individual value chain selection criteria and sub-criteria can be given a weighting which is chosen to meet the needs of the particular community involved, with the scores for more important criteria weighted higher than scores for less important criteria. Weighting of criteria can also be done in a simple numeric way – for example, 1, 2, 3, 4 – where the relative importance of the criterion is in direct proportion to the numeric weighting. This means that a criterion with a weighting of 4 is considered to be twice as important as a criterion with a weighting of 2, and four times as important as a weighting of 1 (M4P 2008).The information used to establish the score for each criterion in each value chain is gathered from individual interviews with key informants, during focus group discussions, and/or from available primary and secondary data for the value chains. The total weighted scores for each value chain can then be compared to determine their relative ranking.

Analysis of selected value chains (Stage 2)

Different organizations use different approaches for value chain analysis (AfE 2014). The common approach in development is to start with a formal study using consultants who spend several weeks interviewing key informants, reviewing statistics, and so on. If time and resources are available, in-depth studies can be very valuable as they provide a thorough analysis of the dynamics within a value chain. However, many organizations now prefer a participatory form of value chain analysis using focus group discussions with value chain representatives to validate

and complement the second-hand information gathered. Some organizations use an incremental approach and opt to go straight into the value chain with an initial facilitation activity. This approach is based on the premise that the best way to analyse a value chain is to develop in-depth relationships with value chain representatives, and to learn from them in an incremental fashion (GIZ 2007). The analysis involves mapping the big picture, preparing a detailed diagnosis of specific dimensions of the value chain, and identifying potential leverage points for change.

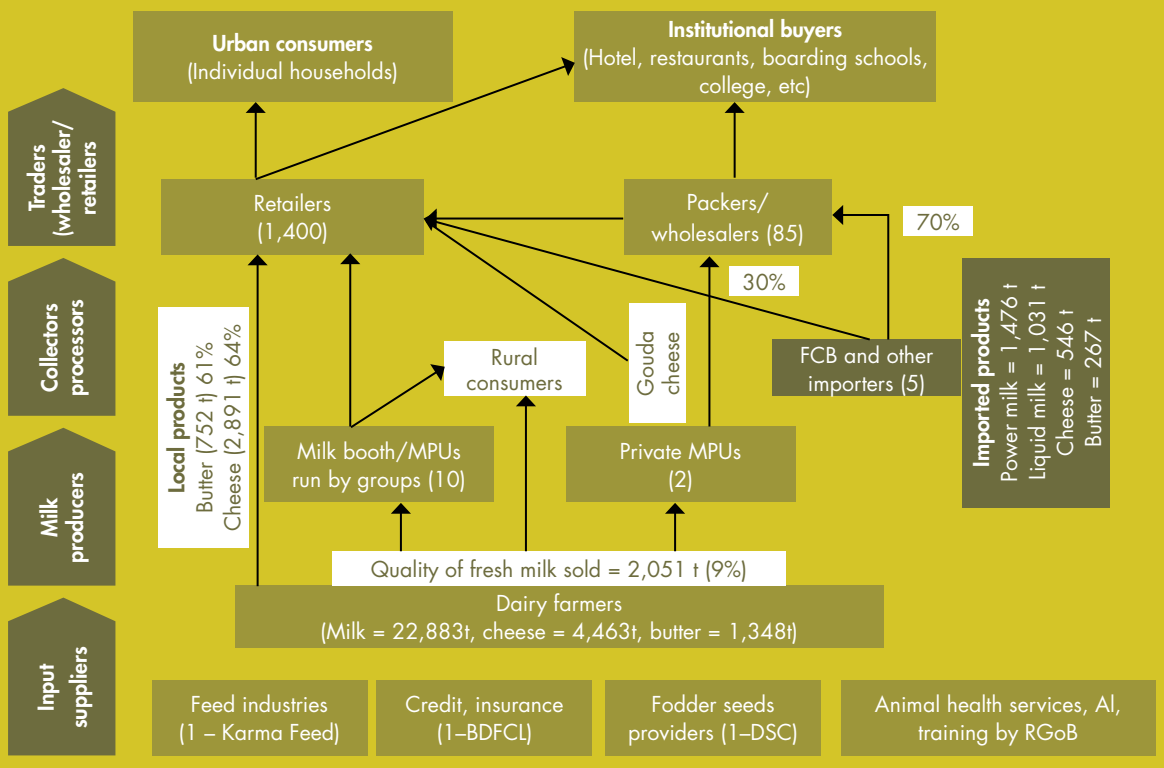
Step 3: Mapping the big picture

The ICIMOD operational guidelines use a combination of all three approaches to value chain analysis with a review of existing information first, followed by interviews with key informants and value chain representatives, and then a workshop with selected stakeholders to validate or revise information and reflect upon potential interventions. After the review of information and interviews, a detailed map is prepared to depict the flow of the product, the points or nodes in the chain, and the volume of transactions at each. Figure 2 shows an example, in this case for dairy products in Bhutan. This map is used as a basis for preparing a more detailed analysis to identify the structure and relationships between economic agents such as suppliers, producers, and wholesalers; and functions carried out by the actors to add value as a product or service is transformed from raw inputs to the final product consumed by end users (FIAS 2007).

Step 4: Detailed diagnosis of specific dimensions

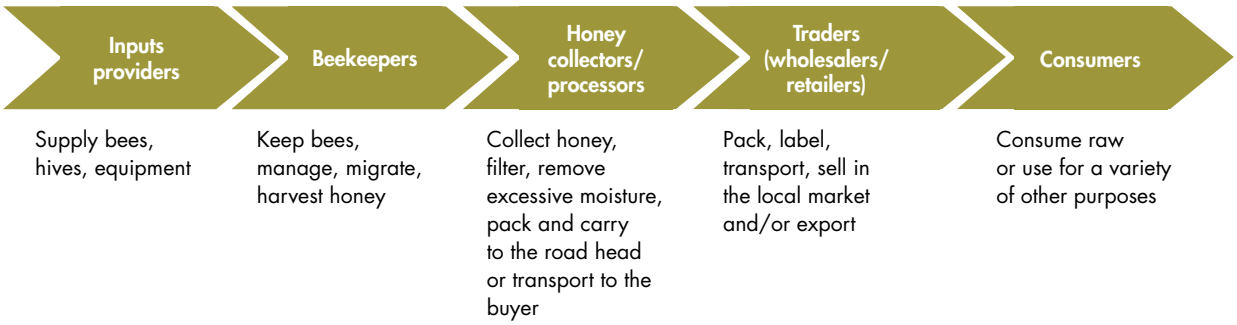
There are many potential dimensions (e.g., governance, gender, service provisions) of the value chain that could be included in an initial mapping exercise. It is important to decide which will be mapped in the preliminary stage; the choice depends on the resources available and the scope and objective of the value chain analysis. It is also possible to prepare a separate map for each dimension of the chain, for example, the map of specific activities undertaken by actors in the value chain (Figure 3).

Figure 2: **Value chain map for dairy in Bhutan**



Source: Joshi 2010

Figure 3: **Mapping of specific activities undertaken by actors in the honey value chain**



Source: Joshi 2008

The following key elements should be covered in the analysis:

- Track the flow of the product from the village to the end market
- Identify the major players in the value chain
- Understand the types of relationships and linkages among value chain actors
- Understand who is performing which functions at each point in the chain
- Track revenue flows (how does the value change along the chain? and who accrues what proportion of the profit margin?)
- Identify the present market conditions of the selected subsector or product: market size, demand supply gap, pricing trends, imports and exports, distribution networks
- Identify existing service providers and assess the services being provided by them and their relationship with clients
- Identify potential service providers and assess their ability and willingness to provide the needed/missing services
- Identify strengths, weaknesses, opportunities, and threats (SWOT) for the product/subsector value chain
- Assess competitive pressures faced by the target communities: access to markets, financial capital, social capital stocks, and familiarity with technology critical in the value chain
- Identify the competitive advantages and disadvantages of the subsector players: market access, technology and product development, management/organization, input supply (raw materials), finance, policy, operating environment/infrastructure, trade regime, and others
- Identify the steps needed for poor people, women, and youth to adapt to changes (growth opportunities or competitive pressures)

One of the important aspects to consider in value chain analysis is to identify added value for the actors at each level of the chain. This helps to understand whether the costs and margins are shared equally, how the pricing of the product is done, and who captures what percentage of the profit margin. In the example shown in Figure 4, out of the MMK 788 paid by consumers for a kilogramme of ginger in Myanmar, retailers receive MMK 121, wholesalers

Figure 4: **Added value along the ginger value chain in Myanmar**

Source: MIID 2015
Note: value added is per kg (trading is generally done in viss, where 1 viss = 1.65 kg); units in Myanmar Kyat, 100 MMK = 0.078 USD

91 local traders 61, and producers 358, to cover their costs and profit margin. It is also important to understand the governance structure of the value chain, i.e. who decides such things as where to sell and who to sell to, what technologies and practices will be used, and where to invest the income. The information flow and decision making process for setting quality standards and trade norms should also be analysed.

Step 5: Identify where in the value chain to seek change

The potential for value creation is determined both by the conditions of the target market, and by the competitive position of the value chain in that market (GIZ 2007). There are a number of tools that can be used to identify points where changes could upgrade the chain and create value. One of the most powerful tools is SWOT analysis – identification of strengths, weaknesses, opportunities, and threats. SWOT helps understand controllable factors (internal strengths and weaknesses of the subsector) and non-controllable factors (external opportunities and threats to the subsector) that the interventions should address for the entire value chain.

The focus in designing interventions is generally on the exploitation of strengths rather than simply addressing weaknesses. In other words, interventions are not only about addressing constraints, but also nurturing the strength of the value chain. The external opportunities and threats are usually classified into political, economic, social, ecological, demographic, and legal forces. They include such circumstances as changing business trends, increased competition, changing regulations, and so on. They can help the subsector move forward (opportunities) or hold it back (threats) – but opportunities that are ignored can become threats, and threats that are dealt with appropriately can be turned into opportunities. The non-controllable factors are generally dealt with through advocacy and networking to bring about changes in the policy framework.

In addition to SWOT analysis, it is important, particularly in agricultural value chains, to understand the potential effects of climate change on the production system and identify areas that need to be addressed to build resilience by altering agricultural practices. Participatory rural appraisal (PRA) tools are often used to understand crop phenology, changes occurring over time, and vulnerability mapping (Table 7). The PRA assessment can be used as a basis for developing a package of climate smart practices (Table 1) to build a resilient production system.

Table 7: **PRA tools used to identify areas sensitive to climate change in agricultural value chains**

PRA tools	Purpose
Crop phenology	Find out the timing of critical stages of crop growth, harvesting, and post-harvest handling
Time line	Find out the history of crop production in the village and major shifts in terms of cultivation practices and marketing, mark years with major climatic factors and effects on production system
Comparative seasonal calendar of the crop	Map out the annual work calendar and compare now and previously (e.g. 10–15 years ago); map out comparative weather factors in terms of intensity, time shift and others
Vulnerability mapping	Identify the vulnerability of the producers to climatic factors and map out the intensity

Identification of leverage points for interventions (Stage 3)

The next stage is to identify leverage points for interventions based on the constraints (and their root causes) and opportunities identified. There are a number of manuals that describe step-by-step diagnostic procedures and provide tools to conduct value chain analysis so as to identify competitive growth opportunities for particular client groups (Kaplinsky and Morris 2001; FIAS 2007; GIZ 2007; SNV 2012). The guidelines presented here include some key questions to be answered to make the value chain pro-poor and climate resilient (see Tables 1 and 2).

Step 6: Generating a long list of interventions

A list of interventions is prepared that will address the causes of the constraints and harness the opportunities identified in Step 5. In some cases there may be several interventions that could address a single constraint, equally, one intervention might address several constraints. The constraints identified during the interviews with value chain participants can be grouped into seven broad categories (Table 8).

Table 8: **Categories of value chain constraints (adapted from AfE 2014)**

Category	Examples of constraints
Technology/product development	• Small-scale farmers lack access to appropriate tools and machinery (technologies), which reduces their yield • Craft producers lack access to new designs which limits their sales to buyers in upscale markets • Micro and small enterprises lack the technical skills needed to produce to buyer specifications which reduces their income and market potential
Market access	• Lack of linkages to large buyers decreases the sales potential of micro and small enterprises • Lack of information on standards reduces the ability of micro and small enterprises to produce to buyer specifications • Lack of intermediaries or brokers limits market outlets for micro and small enterprises • High transportation costs increase the price of production
Input supply	• High prices of inputs restricts use by small-scale producers • Use of poor quality raw materials by micro and small enterprises results in inferior products unable to meet market demands • Micro and small enterprises in remote rural areas lack access to inputs which reduces their productivity
Access to information and services	• Smallholder farmers lack access to information on market prices and volume of demand, which results in gluts in the market and lower prices • Producers lack timely availability of services (veterinary, agriculture extension), which results in reduced yields and pre- and post-harvest losses • Lack of micro-climate specific weather information contributes to marked fluctuations in production • Lack of awareness of the effects of climate change and coping mechanisms increases the risk of crop failures • Inability of farmers to pay for services and pre-finance improved inputs results in reduced yields • Inability of micro and small enterprises to provide adequate collateral decreases their access to working capital loans
Management and organization	• Micro and small enterprises lack time and ability to do accounting which increases costs • Micro and small enterprises lack skills to develop business plans which decreases sales • High rejection rates due to poor quality results in loss of income for producers and buyers
Regulatory/policy	• Import taxes on inputs increases producer costs • Artificial price subsidies prohibit the emergence of micro and small enterprise producers • Export tariffs increase exporter costs and decrease global competitiveness of the value chain • Lack of government contracting procedures that favour micro and small enterprises reduces their opportunity to engage in public sector bids
Infrastructure	• Poor roads (and/or electricity, refrigeration facilities, telephones, and so on) increase the price of final products and makes competing with imports more difficult

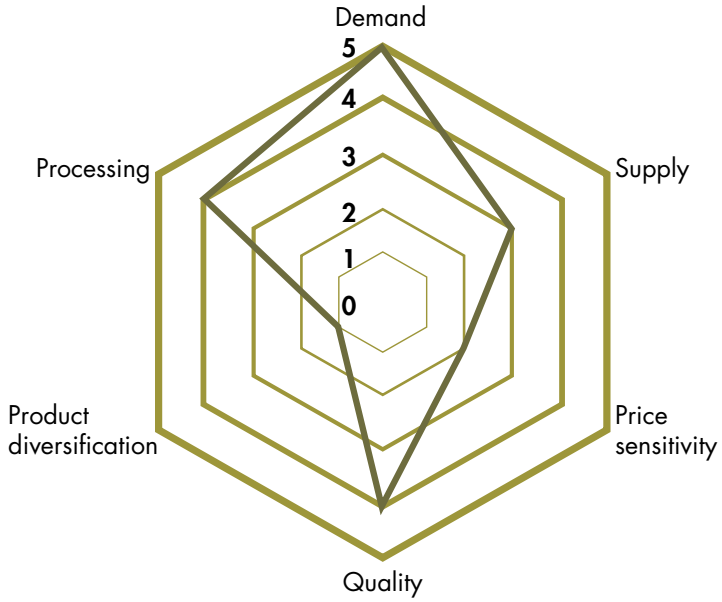
An additional category, socio-cultural, may also apply but is defined by the local culture. Examples of this may include the existence of a caste system or traditional gender roles. In some communities in Nepal, for example, milk produced by Dalits is not combined with milk produced by so-called higher caste farmers.

Smallholder farmers in mountain areas typically confront a variety of constraints. For example, to grow fresh vegetables, they may 1) lack access to improved seeds, fertilizer, and production technologies; 2) be unable to afford irrigation equipment; and/or 3) suffer from lack of respect for contracts between growers and buyers. These might all be critical to increasing production and growth of the value chain, but it is difficult to say which is more important. These constraints might need to be addressed concurrently in order to have the desired impact for small-scale producers.

Step 7: Short-listing of interventions

A short list can be prepared from the long list of interventions using criteria related to feasibility, impact potential, and others. As the saying goes 'a value chain is as good as its weakest link', and it is crucial to identify the key constraints that hinder the growth of the subsector or value chains and what can be done to address those constraints. One of the simple tools often used for this in focus group discussions and workshops is the spider diagram. Participants are asked to provide a rating based on the facts and their experience for each of the critical factors in the development of the value chain. Figure 5 shows a typical diagram rating a particular product value chain in terms of demand, supply, and so on. Clearly the demand is higher than supply and quality of the product is good. But the market also seems to be looking for diversified products at a lower price. Thus interventions should focus on reducing the cost of production (better skills, technologies) and diversifying products, rather than selling more raw/unprocessed products.

Figure 5: **Spider diagram for identifying leverage points**



Developing a strategy and facilitating implementation (Stage 4)

Steps 1 to 7 provide the basis for drawing up a strategy with a set of feasible interventions to assist vulnerable groups to adjust in ways that allow them to take advantage of growing commercial opportunities. These may include shifting to a more profitable or competitive niche (often this involves adopting different or improved technology); improving skills, production quality, and efficiency in an existing niche; or developing new linkages. The value chain strategy should not only emphasize value creation, i.e., generating a higher sales volume and/or achieving better prices, but also income distribution (profit margin of chain operators at different points in the chain) and the sustainability of the chain.

Step 8: Drawing up a strategy and implementation plan for upgrading a value chain

Value chain promotion needs a strategic perspective, which should describe the change aspired to by answering the question: what could be the next level of growth and what changes should be made in the functioning of the value chain. In the context of mountain producers, the following three aspects need to be looked at carefully when developing the strategy and implementation plan.

Marketing principles and context of smallholders: Markets generally operate on the laws of demand and supply. In simple terms, this means that when the supply (the quantity of products that producers can offer for sale) increases, prices fall, and when demand (the quantity of products that consumers would like to buy) increases, prices rise. End-consumers take decisions based on value for money. Hence, to make informed decisions, the actors in the value chain (farmers, processors, and traders) need to know how their production fits in the marketplace within this law. The most successful smallholder farmers will be those who can produce quality products and find ways of adding value to these primary goods. They will need to devise evermore innovative ways of using their labour, resources, and skills to make their production more competitive, add value to primary goods, and target higher value products into growth and higher value markets. In most cases, smallholders will not be able to compete as individuals, and will need to bulk their commodities with other farmers through group marketing.

Gender sensitivity and cultural values: In developing pro-poor and inclusive value chains, key social values of trust, honesty, group support, and responsibility should be shared and agreed on. Not only should the value chain approach lead to increased competitiveness of the subsector or income generation from a product, it should also seek to promote core values of gender equity and social responsibility. Women's inputs are often undervalued and they have little control over decisions; special attention should be paid to the values and needs of women and other vulnerable groups within a community.

Sustainability of the chain: Developing a stable and competitive supply of products and services to the market is a key factor in ensuring the sustainability of a chain. Due to the high dependency of agricultural and forest products on climatic conditions, mountain farmers often face difficulty in meeting the requirements of buyers as there is a high risk of crop failure and production fluctuation. To respond to market demand, they are tempted to make excessive use of farm inputs to increase yield, and to follow unsustainable practices for collecting honey, non-timber forest products, and other natural resources. These extractive processes can have significant social and economic impacts, both positive and negative. In the short term, they can create employment and economic growth, but in the long term, there is a possibility of degradation of the environment and disappearance of the resources. To ensure the sustainability of the chain, it is important to strengthen linkages and provide ecologically suitable and commercially viable market-based solutions for those at the lower end of the chain. This may include both business-embedded and fee-based services. ICIMOD in its effort to ensure sustainability of the value chain is encouraging people to use a matrix for developing climate smart planning (Table 1).

There are different tools available for determining the choice of broad strategic direction for value chain development. Two classic and widely quoted instruments are Michael Porter's 'generic strategies matrix' and Ansoff's 'product/market matrix' (GIZ 2007). Porter's matrix distinguishes two broad strategic orientations according to the relative competitive strengths, the uniqueness of the product, or a cost advantage. Whereas, Ansoff's matrix combines the market dimension with the business opportunities that are within reach. In order to select a strategy, analysts have to assess the competitiveness of the value chain in relation to the opportunity: What is the production cost compared to those of competitors? What are the risks involved in moving into a new market or product?

From a development perspective, upgrading cannot be based solely on competitive advantage but has to be 'pro-poor' at the same time. Facilitators have to make sure that poor producers (including collectors, micro and small enterprises, home workers, and/or employees) are able to receive their share of the value created. Traditional value chain development envisages an upgrading trajectory, which begins with process upgrading, moves on to product upgrading, and then to functional and intersectoral upgrading (Kaplinsky and Morris 2001). These upgrading categories are based on the experience of technological upgrading in the manufacturing sector in East Asian countries (mainly Singapore), and need to be customized to the context of the HKH region, as the problems faced by mountain people are different to those faced by industrial entrepreneurs in places like Singapore. For example, most people in mountain areas have very few financial or other resources to access viable value chains. Upgrading strategies for mountain areas have to be designed by thoroughly assessing all options for the different upgrading categories as shown in Table 9.

Table 9: **Examples of upgrading categories in mountain value chains**

Upgrading category	Description	Examples
Process upgrading	Improving chain efficiency	Introduction of improved cookstoves and solar driers for cardamom processing (saving time, labour, and energy)
Product upgrading	Improving product quality	Shift to organic honey production
Functional upgrading	Changing the mix of functions performed	Ginger growers adding value by processing, retaining freshness of ginger through appropriate packaging and storage techniques (washing, drying, powdering), and shortening the chain by removing intermediaries (entering into buy back agreements with exporters/wholesalers)
Horizontal coordination	Development of relationships among actors working at the same point in a chain	Strengthening of orthodox tea producers cooperatives for bulking up tea leaves and collective marketing
Vertical coordination	Developing relationships among actors at different points in a chain	Setting a code of conduct and documentation system for quality control of honey; provision of credit scheme and veterinary services to farmers in the dairy industry
Chain upgrading	Applying existing skills to a new chain	Maize farmers moving towards intercropping, targeting corn for the poultry industry, soybeans for the local market, and potatoes for making chips (crisps)
Improving enabling environment	Changes to the external governance of the value chain	Changes to policy, law, institutions, support organizations, for example, reduced local government sales taxes for honeybee products

Figure 6: **Drawing up a value chain upgrading strategy**

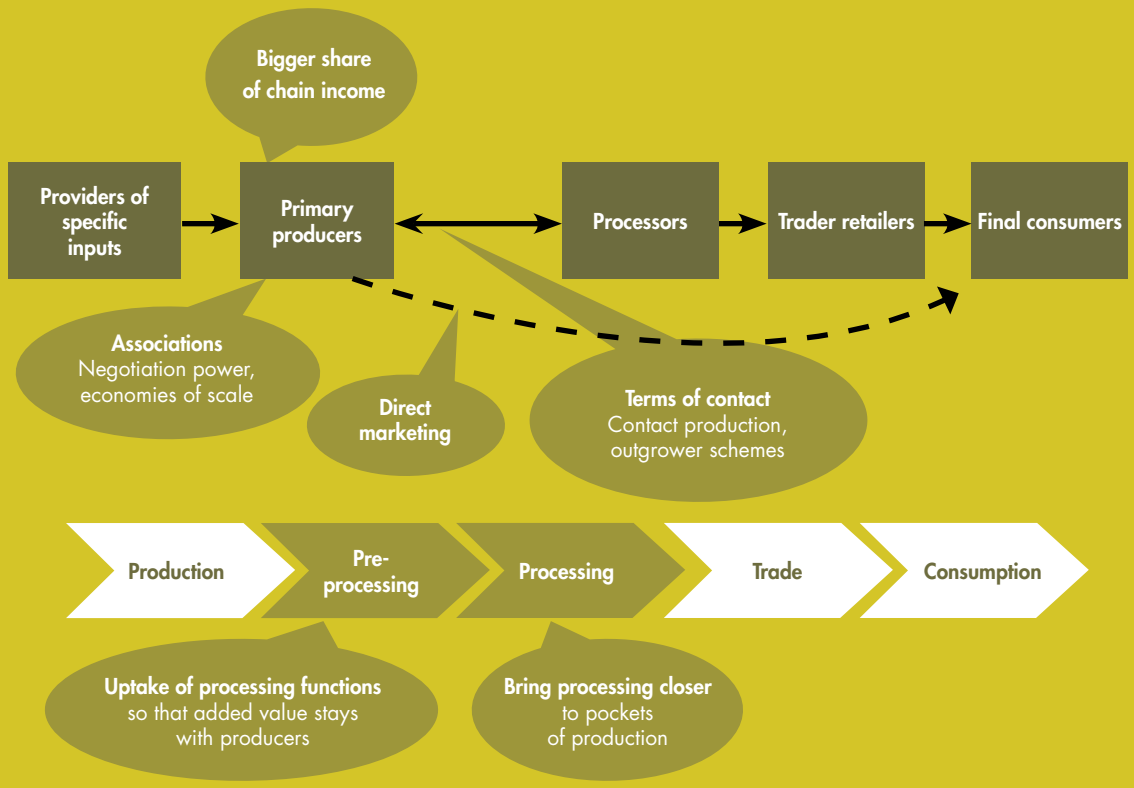


Figure 6 shows an example of a value chain upgrading strategy. The primary producers (who are often the target beneficiaries in development programmes) could gain a bigger share of the income in the chain in a number of ways. Depending on the overall context, the chain facilitator might consider (1) organizing producers into groups or cooperatives and increasing their negotiating power, for example through bulking-up of the product or better information flow; (2) supporting producers to establish contractual arrangements with large buyers, thereby bypassing the role of middlemen; (3) building the capacity of producers to enable them to carry out primary processing at village level rather than supplying products in raw form; and (4) encouraging agribusinesses (processors) to establish processing facilities closer to the pockets of production.

Step 9: Facilitating implementation of the value chain upgrading strategy

Value chain development is an actor-oriented approach and responsibility for implementing the upgrading strategy lies with the actors. The actors in the chain must also 'own' the vision, and development facilitators need to promote that sense of ownership (GIZ 2007). The development facilitator should ensure that the development interventions don't increase the dependency of the value chain actors on external facilitation. In terms of handling the products (buying, selling, product transformation), the facilitators should remain as outsiders with a clear strategy. The typical tasks in facilitating value chain upgrading include creating awareness and understanding the importance of chain development; helping build a shared vision of the future and forging a consensus on the objectives and strategy of value chain upgrading; and facilitating a process for planning, implementation, and monitoring of the value chain strategy. The specific tasks for facilitating the implementation of the value chain development strategy may include, but are not limited to:

- Horizontal coordination (strengthening farmers' groups/cooperatives to ensure bulk supply and improve bargaining power);
- Vertical integration (strengthening business relationships so that producers groups/cooperatives can move into joint processing and marketing in order to add value; encouraging producers to take up some pre-processing functions such as cleaning, sorting, grading, and grinding/powdering instead of supplying unprocessed products);

- Promoting sustainable production and post-harvest management (demonstration of appropriate, cost effective, and climate smart practices at each point in the value chain);
- Improving service provisions (matching the requirements of service providers and users including access to finance, extension, and other business development services);
- Strengthening and/or developing rural enterprises (by improving technical skills, identifying capacity building needs, developing training manuals, facilitating cross learning, and other capacity building related activities);
- Developing partnerships in the chain between producers and buyers based on a clear understanding of and respect for their particular interests and shared values (forging buy-back agreements and other contractual relationship with private companies and encouraging them to bring processing and packaging facilities closer to pockets of production); and
- Information and knowledge exchange (information on price, market demand, quality and trade requirements, weather prediction and forecasts, and others).

Monitoring and evaluation (Stage 5, Step 10)

Monitoring and evaluation is an important area for development projects because

- it provides a consolidated source of information showcasing project progress;
- it allows actors to learn from each other's experiences and offers paths for learning and improvement;
- it generates (written) reports that contribute to transparency and accountability;
- it allows agencies to learn lessons and incorporate them into policy and practice;
- it provides a basis for questioning and testing assumptions;
- it provides a way to assess the crucial link between implementers and beneficiaries on the ground and decision-makers; and
- it adds to the retention and development of institutional memory.

Packaging and labelling can improve revenue generation at the lower end of the value chain

Monitoring should be considered as a periodically recurring task that takes place from the beginning of project planning, whereas evaluation can be done to assess a completed project (or a phase of an ongoing project that has been completed). Evaluations should help to draw conclusions about five main aspects of the intervention: relevance, effectiveness, efficiency, impact, and sustainability.

For effective monitoring and evaluation, it is important to set indicators. These are "quantitative or qualitative factors or variables that provide a simple and reliable means to measure achievement, to reflect the changes connected to an intervention, or to help assess the performance of a development actor" (OECD 2002). Indicators provide the basis for assessing if an objective has been achieved or what progress has been made. In order to develop appropriate indicators, the stakeholders must understand and support the logic behind the intervention, the results to be assessed, and the changes to be made in the value chain.

The first – and essential – step in monitoring and evaluation is to conduct a baseline household survey of target beneficiaries. This is done after developing the strategy and designing the intervention, but before implementation. The indicators are selected as appropriate for the aims and approach of the intervention. The survey is then repeated at a suitable point in time after project completion. In order to be able to compare the situation before and after project intervention, and to determine whether any change can be attributed to this intervention, ICIMOD suggests carrying out the surveys at a control site as well as the project intervention site. Depending on the size of the project, a mid-line survey can also be conducted.

Mountain products have comparative advantages due to their pristine environment and unique production methods

Conclusion

Value chain development is a market-led approach that can be used to increase the benefits obtained by poor rural producers from the raw material they produce or from the services they provide, while strengthening mutually beneficial business relationships between actors working at various points of the chain. It works well for products and services that have already reached a certain stage of growth. The approach is effective in building relationships and trust among the actors in the value chain, which also facilitates improving the competitiveness of the products/services involved. It both encourages competition to better satisfy end consumers, and promotes collaboration between and within various levels of actors in the chain (e.g., one cooperative or firm may make efforts to be more competitive than another, while they also join hands and raise a collective voice for common issues that hinder the growth of the sector/subsector or value chain).

The operational guidelines presented here outlines a methodology, in five stages with ten steps, for selecting and developing value chains that are pro-poor and climate resilient while still focusing on the core aspect of improving competitiveness. It provides practical tools and guidelines for development practitioners to overcome value chain constraints and seize opportunities in a sustainable manner to provide long-term benefit to mountain communities. The process described in the guidelines should result in improvements that increase the competitiveness of the value chain overall, while ensuring sustainability and climate resilience; increase the benefit to the people in mountain communities at the start of the chain, especially the more disadvantaged; and increase the equitability of benefit distribution. The extent to which this has been successful can be assessed by asking the following key questions:

- What impact have the various value chain interventions had on income distribution between and within various levels of the value chain?
- Have the value chain interventions helped to lessen the gap between women and men in participation and benefit sharing?
- Do the value chain actors apply climate smart practices at different levels of the value chain?
- Has there been increased investment by the private sector to establish processing/value adding activities closer to the production areas?
- What has changed in the value chain governance system and how is this affecting income and employment opportunities for women, men, and rural youth?
- Are the various value chain technologies and practices promoted at the pilot site being scaled out and scaled up by other organizations?

Working together creates shared value

Introducing new techniques and designs can improve the quality and value of traditional hand woven products

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