

Pro-Poor Value Chain  
Development for High Value  
Products in Mountain Regions:  
Indian Bay Leaf

# Executive Summary

High value products and services, such as non-timber forest products (NTFPs), medicinal and aromatic plants (MAPs), indigenous honeybees, and eco-tourism, feature prominently in strategic planning for community-based natural resource management and poverty alleviation programmes in mountain regions. Recent trends show that value chain concepts and approaches are useful in increasing our understanding of how firms and producers of high value products in developing countries are integrating into national, regional, and global markets. The mountain specific value chain approach can be a useful tool for improving the terms of engagement of producers and service providers in HVP value chains in Himalayan countries.

This publication presents the results of an action research project on 'Developing entrepreneurship in value chains of *Cinnamomum tamala* (Indian bay leaf): linking poor producers to markets for essential oils and spices', which was implemented in Chamoli district of Uttarakhand, India, and Udayapur district of Nepal. The leaves of the Indian bay leaf tree are in high demand in South Asia and especially in Indian markets; they are used in spices, traditional medicines, and flavourings. The aim was to support poor mountain households in remote regions to engage more successfully in bay leaf value chains. The action research focused on integrating three crosscutting themes – poverty, environment, and gender – into value chain analysis and upgrading, and promoted cross-border learning and the sharing of good practices.

A detailed analysis of the bay leaf value chain in the two country sites showed that around 900 tonnes of raw bay leaves are produced and exported from Udayapur in Nepal every year; and 20 to 40 tonnes had been produced from one range of government-managed forests in the last harvest from Chamoli in India in 2002/03. In Udayapur, Nepal, nearly 25% of the total bay leaf is processed as essential oil by Thapa Herbal Company. An estimated 2,150 tonnes of bay leaves are traded to India from Nepal annually. Farmers in Nepal earned a gross margin of 11%, and traders 34%; collectors in India had a margin of 10%, and traders 17%. The bay leaf value chain exhibited strong underlying inequality and power differences between the upstream producers and downstream actors.

Key issues to be addressed at the upstream level were lack of organisation of the producers, lack of market information and access, absence of quality management practices, lack of capacity to conform to market requirements, policy hurdles to access bay leaf resources on government land, and multiple taxes. Upgrading strategies were developed using a participatory approach. An equal number of men and women collectors/producers were helped to form groups and apex institutions for the production and marketing of bay leaves. Market information was gathered through surveys and shared with these groups and institutions. Training programmes were organised on group building; bay leaf cultivation, management, and sustainable harvesting; and enterprise development. Linkages were facilitated with buyers (local traders and exporters) and contracts were signed. Innovations in marketing through local auctions and community access to bay leaf resources in government forests were piloted in India through policy readjustments. Different government line agencies were mobilised for technical support and, as part of the purchasing contracts, buyers agreed to provide training on the collection, grading, sorting, and packaging of leaves. Special emphasis was placed on the sustainable harvesting of leaves and plantation development for environmental conservation.

The value chain interventions led to immediate benefits for the poor producers in terms of increased income, enhanced understanding of environmental values, and increase gender equality. Following training, harvesting practices were modified, which led to increased, sustainable, and better quality production. The increased income led to improved food security, repayment of loans, children's education, clothes, and use of cash for household needs like fitting solar lights.

The research showed that value chain interventions at the upstream level can be of direct benefit to the mountain poor, but that they need external facilitation at different levels to participate in and gain from national and regional value chains. The results provide inputs for pro-poor value chain development in mountain regions that can be scaled up for different high value products produced in mountain regions.

# Pro-Poor Value Chain Development for High Value Products in Mountain Regions: Indian Bay Leaf

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## Contents

Executive Summary	
High Value Products and Value Chains	1
Piloting a Pro-Poor Value Chain Approach to High Value Products in India and Nepal	2
Action Research Design and Key Interventions	5
Upgrading Strategies	12
Implementing the Strategies	14
Impacts of Value Chain Upgrading	17
Lessons Learned and Discussion	20
Conclusion	21
References	24
Acknowledgements	24
Acronyms and Abbreviations	24

## High Value Products and Value Chains

### Livelihoods and high value products in mountain regions

The majority of people in the Hindu Kush-Himalayas depend on subsistence agriculture and natural resources for their livelihoods. However, traditional agriculture alone is not sufficient to meet the food requirements of most of the population. In recent years, economic growth, shifting population dynamics, and climate change have taken place so rapidly and intensely that traditional adaptation mechanisms are losing their efficacy. The changing global environment and societal changes mean that opportunities need to be generated locally for mountain people to strengthen and adapt niche product and service systems to tackle the chronic and growing poverty.

### Rationale for value chain development for high value products

The vast majority of the greater Himalayan region's poor people live in rural areas – large expanses that are outside the mainstream economy. Rural poverty cannot be addressed without the economic development of such areas. Rural producers can only overcome poverty if they develop a sustainable economic base with links to urban and export markets. This is a complex task, as urban and export markets do not favour the integration of poor people into their present production capacity and status. Globalisation has raised barriers to entry for the poor, increasing competition through the substitution of many mountain products, and possibly generating forms of integration into the market that endanger the environment and aggravate social imbalances. However, globalisation has also opened up new opportunities. Of particular interest to mountain areas is the growing group of aware consumers who do not accept systems of production that fail to respect social and ecological values. There has also been a resurgence in products based on traditional knowledge; and there are options for product diversification based on harnessing the climatic and environmental niches in mountain regions for expanding markets.

Recent trends show that value chain concepts and approaches can be used to increase understanding of how firms and producers of high value products in developing countries are integrating into regional and global markets. A value chain

describes the full range of activities that are required to bring a product or service from conception, through the different phases of production and delivery, to consumers, and final disposal after use (Kaplinsky and Morris 2000). Research is being carried out into the different types of value chain governance and the opportunities they provide for technological or functional upgrading by producers and traders in rural areas. The value chain approach generally revolves around analysing the structure, actors, and dynamics of value chains that connect farm and forest products through the various stages of processing and other value added activities. It includes the examination of types and locations of actors in the value chain and the linkages between them, as well as the dynamics of inclusion and exclusion in a chain. The value chain approach also entails understanding the structure of cost and benefit sharing among participants in the chain, the functional division of labour along a chain and its changing shape, the role of standards and labels in facilitating or hindering participation by producers, and the distribution of value added activities along the chain. The value chain approach is a useful tool for improving competitiveness and the margins of producers and service providers of high value products (HVPs) in rural areas.

### Need for a mountain value chain framework

Mountain value chains are influenced by a set of mountain specificities to which they owe their comparative advantage, enabling the products to reap higher returns, but at the same time posing challenges. Mountain specificities such as the availability of unique and niche products and services, poor accessibility, fragility, diversity, and marginality have a strong impact on value chain analysis and on the selection of value chain development options. Over the years, the value chain approach has been implemented in mountain areas, but without contextualisation to the mountain environment. A generic value chain framework lacks understanding of the socioeconomic and environmental imperatives in mountains, which greatly shape the ways in which interventions function. When mountain specificities are disregarded, value chain interventions are less successful and can expose mountain communities to even more vulnerability. Hoermann et al. (2010) analysed the structure and functioning of the characteristics of mountain specific value chains to develop an analytical and strategic framework for value chain development in mountain areas.

Value chain development for HVPs can be detrimental to the participation of the poor if the generic approach to developing competitiveness in the chain and the value chain promotional activities only focus on downstream participants. People in remote and less favoured regions need a specific focus and interventions designed to address their needs and priorities; their benefits cannot be achieved through a 'trickle down' affect. A coherent framework is needed to guide such activities adequately by addressing the often highly asymmetrical power relations in HVP value chains so that upstream producers from remote mountain areas can participate and benefit equitably.

## Piloting a Pro-Poor Value Chain Approach to High Value Products in India and Nepal

### Bay leaf – A high value product

Medicinal and aromatic plants (MAPs) are an integral component of the rich biodiversity of Asia, and especially so in the Hindu Kush-Himalayan region. Medicinal and aromatic plants are attracting increasing attention from development planners and environmentalists due to their multiple functions and potential to contribute to improving the livelihoods of rural and marginalised communities. Medicinal and aromatic plants are a source of income, traditional medicine, dye, nutraceuticals, food products, and cosmeceuticals, benefiting the poor and landless in mountain and highland regions (Belcher 1998; Karki 2000).

Indian bay leaf (*Cinnamomum tamala*) is a much used species of MAP; it is found in the wild as well as being cultivated by mountain farmers (see Box). Indian Bay Leaf meets the requirements of mountain specific products to enter national, regional and global value chains. It has a wide geographical distribution in the Himalayan region and large scale demand. It is used as a spice in local and regional culinary, and for production of essential oils (potential for local value addition) that are used in the food, flavour and pharmaceutical industries.



## Indian Bay Leaf

The Indian bay leaf tree (*Cinnamomum tamala*) belongs to the Lauraceae family. It is found in the forests and farmlands of the hills and mountains of Nepal and India. The leaf of this species is called 'tejpatta' or 'tejpat' in India and Nepal; the bark is called 'dalchini' and is used as a substitute for the bark of *C. zeylanicum*. The best-known places in Nepal for Indian bay leaf production are Palpa and Udayapur districts, which are located in the mid hills belt of the Western and Eastern Development Regions of Nepal. Other districts that produce bay leaf include Rasuwa, Sindhuli, Salyan, Dolpa, and Jajarkot (Pandit et al. 2004). In India, bay leaf is found in the sub-tropical Himalayan states of Himachal Pradesh and Uttarakhand, the Khasi and Jaintia Hills in North East India, Jammu and Kashmir, Sikkim, and Meghalaya within an altitudinal range of 450 to 2100 m (FRLHT no date). Bay leaf is also reportedly found in Bhutan and Myanmar.

## The bay leaf sector in India and Nepal

Bay leaf is one of the species of MAPs that has a demand exceeding 100 tonnes in India (Ved and Goraya, 2007) and is among the top ten species of MAPs that are traded between Nepal and India. Traditionally, India has been the regional market for bay leaves. As with other MAP species, the bay leaf value chains in India and Nepal are highly disorganised and secretive. There is a lack of information on product flows and prices, and traders and middlemen dominate the trade. Collectors, who are poor and generally unorganised, receive very low prices due to lack of information, technology, and bargaining power, as well as their poor management capacity and institutional support.

Over the years, Indian bay leaf has emerged as a semi-domesticated tree that provides supplementary income to marginal farmers and poor forest dependent people (Tiwari 2003). In Meghalaya, the trees growing in the wild are protected and promoted by local people to regenerate and grow in their natural habitat in association with a variety of other native trees. Depending upon the age and size of trees, the unit production in Meghalaya ranges from 30 to 75 kg/tree/year. In Nepal, the annual average yield per tree has been estimated at 13 kg of dry leaves (Parajuli 1998). Local communities collect bay leaves from government forests in Uttarakhand, India, as per the Forest Department rules, and large-scale cultivation is reported in Champawat district of Uttarakhand.

In 2002, the Medicinal and Aromatic Plants Programme in Asia (MAPPA) assisted community forest user groups (CFUGs) in Udayapur district of Nepal to improve their management of species in community forests and to establish enrichment plantations. The intervention drew the attention of an entrepreneur who established a distillation facility to process the leaves into oil, and the project facilitated a contractual arrangement for essential oil with the Herbs Production and Processing Company Limited (HPPCL), a Government of Nepal undertaking. The arrangement is still operational and cultivation of bay leaves is a major source of income in Udayapur district. Similarly, development agencies and community-based organisations have targeted the bay leaf sector by developing cooperatives for the marketing of value added products in Palpa district of Nepal. However, bay leaf producers still face problems including lack of market information, lack of awareness about quality standards, absence of forward and backward linkages, and an unfavourable policy scenario for marketing and trade. Such ongoing community initiated projects need further partnerships and assistance in terms of technology, market access, capacity building, quality standards, and policy support to be sustainable in the long term.

ICIMOD's experience indicates that there is still a lack of effective coordination among different agencies in the bay leaf sector. An integrated, people-centred value chain model on bay leaf has yet to be analysed, developed, and tested in the two countries. The VC approach is relatively new to the region and the MAPs sector, and stakeholders do not have the same level of understanding and experience in applying and using the approach. Hence there is a need to study the bay leaf value chains to develop mechanisms that can ensure equity and empowerment of the most vulnerable producers and local traders throughout the process.

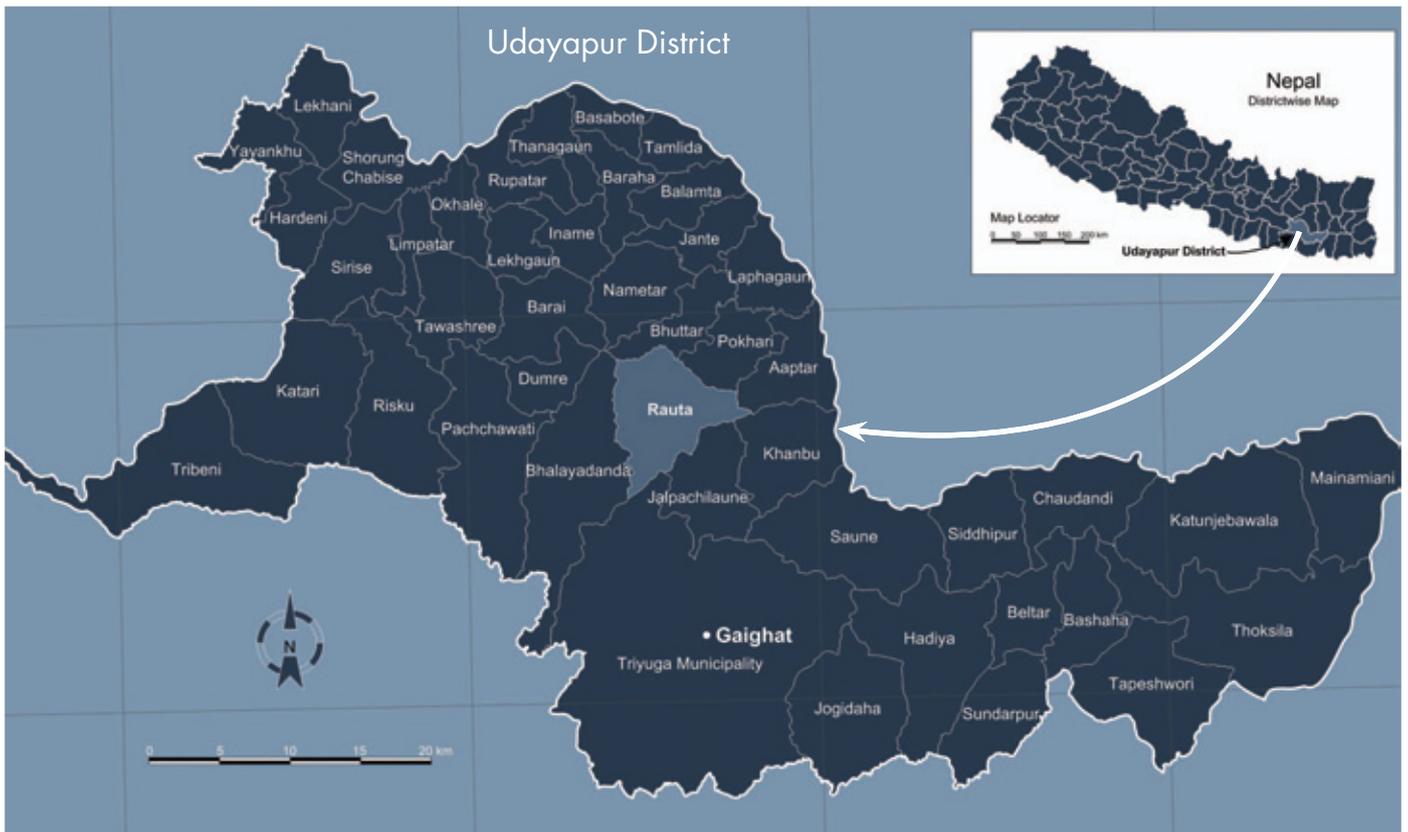
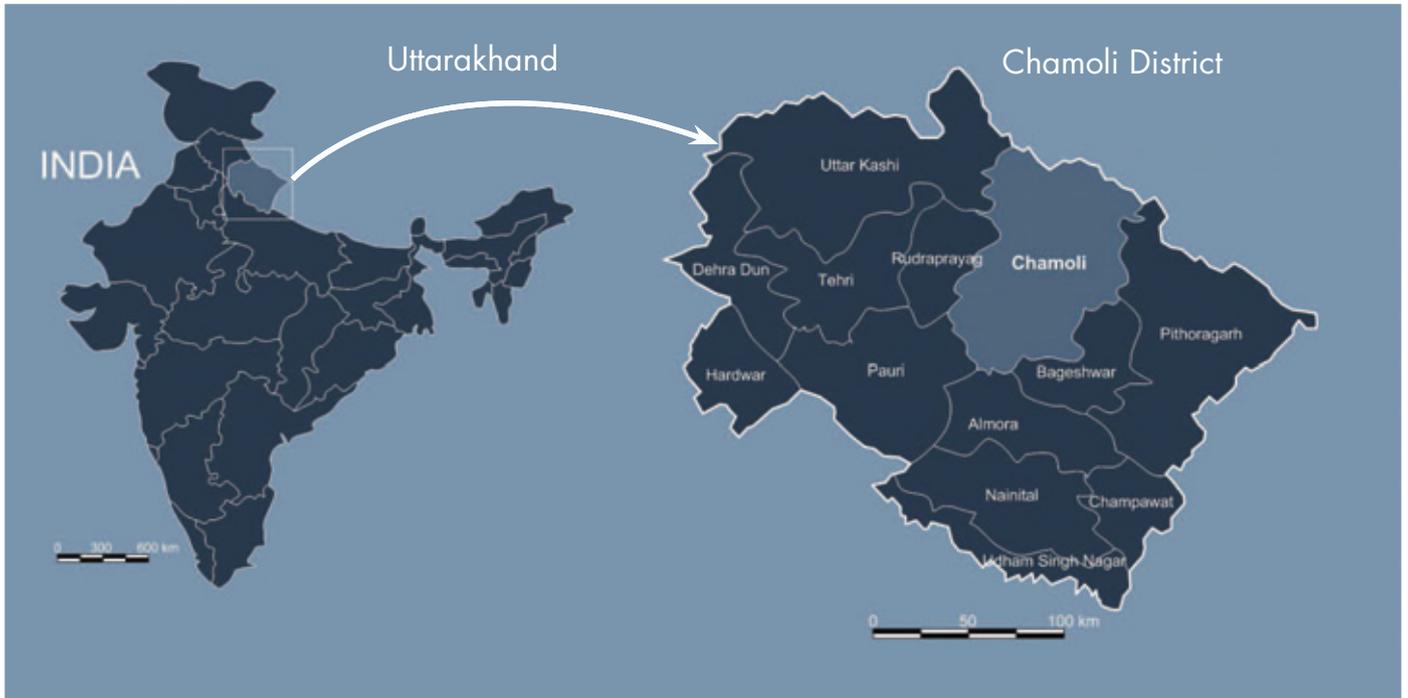
## The action research project

ICIMOD carried out a two-year action research project from January 2007 to December 2009, together with the UK Overseas Development Institute, and with financial support from the International Development Research Centre (IDRC), Canada, to understand how the mountain poor can be integrated into value chains. The action research was focused on the value chain for *Cinnamomum tamala* (Indian bay leaf) and carried out with the Himalayan Action Research Centre (HARC) in Chamoli in India, and the Udayapur District Chapter of the Federation of Community Forestry Users Nepal (FECOFUN), in Udayapur in Nepal. The sites were selected based on the criteria of availability of bay leaves either cultivated or wild; prevalence of trade in bay leaves; and interest of the stakeholders to participate in the research.

### The project sites

Chamoli district in Uttarakhand State in India consists of 9 blocks and 1,233 villages located at an altitude of between 1,200 and 2,400 m (Figure 1). In 2001, Chamoli had a population of 19,855; 56% male and 44% female. The average literacy rate of 81%, is higher than the national average of 60 %, with male literacy at 85% and female literacy at 75%. Ten per cent of the population is under 6 years of age. Farming is the major occupation of the villagers on the gentle hill slopes and intermountain valleys.

Figure 1: Project sites



Udayapur district in Nepal consists of 44 village development committee areas (VDCs) and a municipality, with a total population of 287,689; almost 50% female. The overall literacy rate is 54%, with male literacy at 65% and female literacy at 43%. The trading of non-timber forest product (NTFPs), particularly cultivation and trading of bay leaf, has been one of the most important activities in the district for the past three to four decades.

The project was implemented in 6 villages covering 650 households in Najmola valley in Chamoli district of India, and 6 villages covering 800 households in Rauta VDC in Udayapur district of Nepal. Ten per cent of the population, 64 households in Nepal and 81 households in India, were selected at random as direct beneficiaries of the project and for collecting baseline information. Details of the sample households are given in Table 1.

Table 1: **Distribution of sample households**

Categories	Nepal (Udayapur)		India (Chamoli)	
	No.	%	No.	%
<b>Gender of head of household</b>				
Male	64	79	35	55
Female	17	21	29	45
<b>Total</b>	<b>81</b>		<b>64</b>	

### Key action research questions

The following were some of the key issues in the action research:

- How to strengthen the participation of collectors and farmers in bay leaf value chains to increase their income?
- In which contexts and situations do bay leaf value chains benefit the poor and help enhance livelihoods?
- What could be the impacts of promoting bay leaf value chains on poverty, environment, and gender?
- Which institutional mechanisms, rules, governance structures, and support services constrain or benefit poor producers in NTFP/MAP resource management and from participating in markets?
- How can the experience/good practices of national and regional development research and extension organisations be customised to meet the needs of stakeholders, especially poor producers?

### Target groups

The target groups in the action research were small and marginal farmers practising subsistence agriculture and landless households that depend on the collection of wild bay leaf and other NTFPs. These groups mostly represent the lower strata of society (poor and marginalised groups including, Dalits, scheduled castes, and women) with limited access to livelihood options. They depend on non-timber forest products and medicinal and aromatic plants to generate additional income.

## Action Research Design and Key Interventions

### Research method

Action research was used in order to involve the target groups and related stakeholders in the research process and to learn from and apply the results in a participatory manner. Figure 2 depicts the action research process developed by the Overseas Development Institute and the Danish Institute of International Studies research team.

There were 10 steps in the participatory action research (PAR) for the analysis and development of the value chain: 1) action area and partner selection; 2) multi-stakeholders' meeting and key informant interviews; 3) identifying target groups and organising groups (including wellbeing ranking); 4) collection of baseline information; 5) value chain mapping and analysis; 6) developing upgrading strategies; 7) training and capacity building; 8) implementing upgrading strategies; 9) monitoring and evaluation; and 10) information sharing and dissemination.

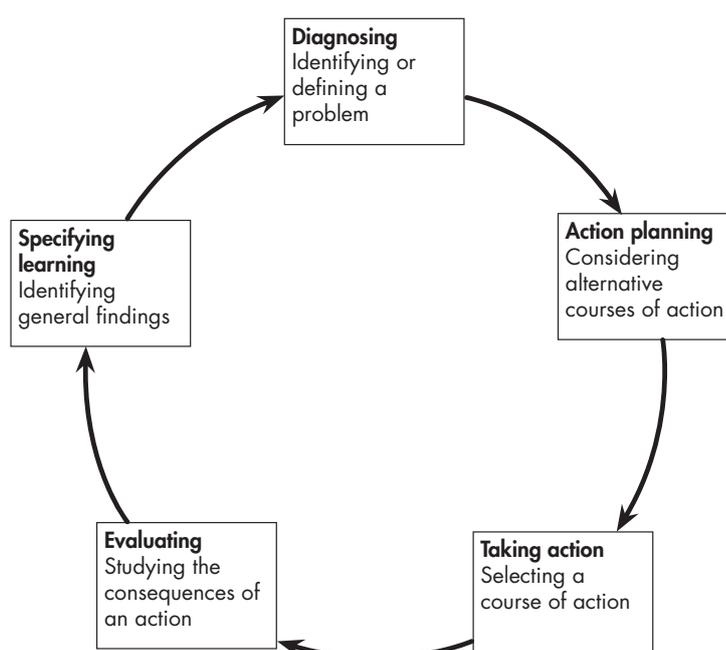


Figure 2: **Action research process**

### Socioeconomic situation in the target areas

The average household size was 6.64 in Nepal and 5.21 in India. The sampled households in Nepal were overwhelmingly from indigenous groups (83%); the remainder were Dalits. In India, only Dalit (scheduled caste) households were selected. The average literacy rate was 62% (male 65%; female 60%) in Nepal and 80% in India. On average, 58% of men and 43% of women relied on farming (agriculture and livestock) in Nepal, compared to 38% of men and 48% of women in India.

The growing of bay leaf trees on farmland to fulfil basic household needs is a long established tradition in the area studied in Nepal. Farmers use their landholdings in an efficient manner by growing cereal crops on good quality land and bay leaf trees on poor quality land, mostly along farm boundaries and on land in between government forests and private land (land that is usually unregistered called 'losepose'). Altogether, 90% of farmers were growing bay leaf trees on private land in Nepal. In India, bay leaf is mainly grown in state forests, with the exception of a few trees grown on farmland. Only 9% of farming households had started planting bay leaf on their farmland.

In Nepal, almost half (46%) of the sampled households owned irrigated land (khet) and all owned rainfed upland. More than 90% of households in Nepal and India were raising livestock (cattle, buffalo, and goats).

In both action areas, villagers had established some kind of savings system, formal or informal. In Nepal, more than one-third (35%) of sampled households had savings in their own (largely informal) savings groups. In India, 62 out of 64 sampled households had savings in saving institutions. Food security was a major concern at both project sites. Figure 3 shows the food availability from farming at the two sites.

The average annual income per sampled household in Nepal was NRs 29,000 (USD 424) and in India IRs 38,864 (USD 864). The income from different sources in the two areas is shown in Figure 4. Bay leaf income constituted 2.4% of income in the sampled households in India and 10.2% in Nepal.

### Value chain mapping and analysis

The results described in the following are the baseline values in 2008 at the start of the project. The value chains from both the pilot sites were mapped through the different actors and stages up to the end market in Uttarakhand. Information was gathered in interactions and focus group discussions with key informants from the public, private, and social sectors.

#### Nepal

In Udayapur, bay leaves were marketed mainly through four satellite market centres: Katakari in the west, Murkuchi and Gaighat in the centre, and Beltar in the east. The total volume arriving in these centres annually was 900 tonnes, of which 470 tonnes was produced by farmers in the action area VDC. Of the total production, 135 tonnes was processed as essential oil and the remainder was marketed in raw form with poor post harvest management. Bay leaves pass through six value chain levels: village collection/production; local/road-head/district trade; oil processing; wholesale/export; import; and finally consumption (Figure 5). A total of 31 traders, 15 wholesalers, and 13 Indian buyers were involved in bay leaf trading in Nepal.

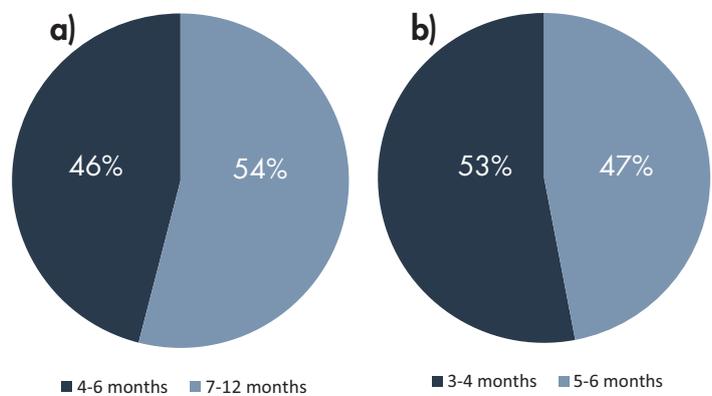


Figure 3: Food sufficiency from farming a) Nepal, b) India

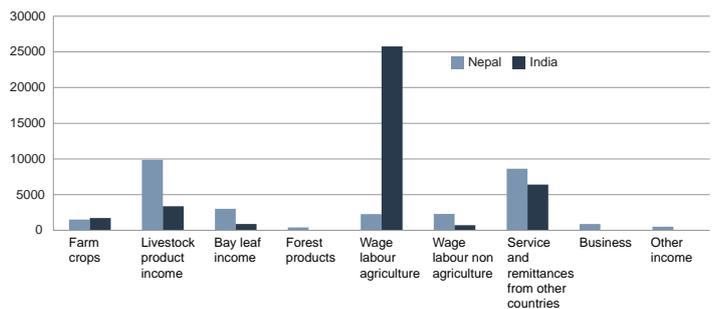


Figure 4: Income from different sources

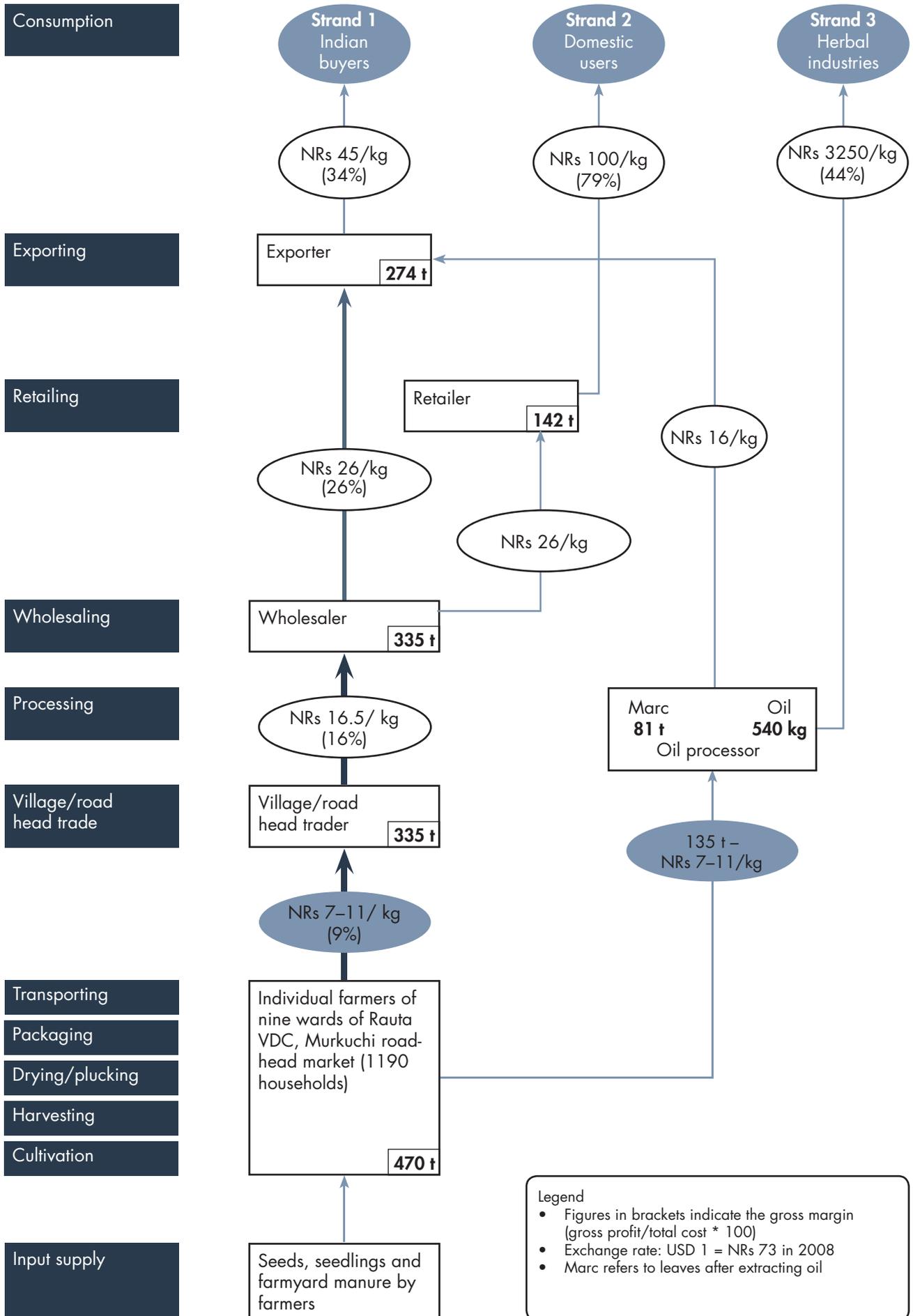


Figure 5: Value chain map (initial scenario) – Udayapur, Nepal, 2008

Analysis of the first level of the value chain, production and collection activities, revealed the following. On average, one household had 50 *Cinnamomum tamala* trees, yielding 1.5 tonnes (or 30 kg per tree) of dry weight leaves at the end of the fifth year after plantation. This yield continues for up to 25 years, at which point the yield declines or the trees are replaced. Farmers and collectors mostly sold bay leaf to village-based or district traders. If producers sold bay leaf locally, they received NRs 6 to 8 per kg; if they sold it to road head/district traders in Katahari, Murkuchi, Gaighat, or Beltar, they received NRs 7 to 11 per kg.

The second level of the VC analysis focused on local, road head, and district trade. Most of the bay leaves purchased from producers/collectors were traded by road head and district traders to wholesalers located at the Nepal-Indian border or to regional towns and the capital. Interviewees estimated a sales price of NRs 16.50 per kg at this level. Costs are, however, considerable with packaging at about NRs 100 per 100 kg, storage at NRs 50,000 per 300 tonnes, transportation at NRs 30,000 per truck with a capacity of six tonnes, and hidden costs (bribes and extra payments) of NRs 2 per kg.

The third level of the value chain is oil processing. Of the total bay leaf production in the action area (470 tonnes), about 30% was processed further into oil at the processor's level, achieving a sales price of NRs 3,200 per litre in 2007. Estimates indicate that producers would be able to receive a much higher share (44% margin) through oil processing. The major concern in bay leaf oil processing is the high amount of firewood required which can lead to the degradation of forest, and the lack of skilled labour to do the processing. Most of the oil produced was sold to the government-owned Herbs Production and Processing Company Limited (HPPCL) in Kathmandu.

The fourth level consists of the wholesalers and exporters, who were based at Gaighat, Saptari, Siraha, Nepalganj, and Kakadbhitta in Nepal. The district traders from Gaighat also functioned as wholesalers and sold 213 tonnes of bay leaves to the exporters at NRs 26 per kg. A further 81 tonnes of marc (bay leaves after the oil is extracted) was sold to the exporters at NRs 16 per kg.

The fifth level of the bay leaf value chain in Nepal is the importers, who are mainly based in the Indian towns of Tanakpur and Ramnagar in Uttarakhand; Kanpur and Lucknow in Uttar Pradesh; and Siliguri in West Bengal. Importers paid NRs 45 kg for bay leaf upon delivery. It was estimated that 213 tonnes of bay leaf were traded from the project area to India.

The sixth level of the bay leaf chain is consumption, which can be divided into two parts: (i) Indian spice makers and exporters, and (ii) manufacturers of ointments and consumers of leaves within Nepal. It was estimated that 100 tonnes of bay leaves were retailed within Nepal at NRs 100 per kg. Similarly, 450 kg of oil were used within Nepal, the largest buyer being HPPCL.

## India

The bay leaf value chain in Chamoli was more or less non-existent at the time the project started compared to the value chain in Udayapur. Therefore, the aim of the value chain analysis was to gain an initial overview of the various stages of trading and processing from upstream to downstream stakeholders as per the trading last carried out in 2002/03 (Figure 6).

Initial information showed that bay leaf collection from the project site in Uttarakhand was an estimated 30 to 40 tonnes. Bay leaf was collected from February to March. Interestingly, participants mentioned that bay leaf was collected every year from private lands (from Champawat district), but only every five years from government lands, which are governed by a specific working plan of the Forest Department. Communities in the project site in India could not access bay leaves as the trees were in reserve forests and they did not have collection rights. When asked how different harvesting practices affect, for example, the quality and quantity of leaf, they were unable to give a satisfactory answer.

In India, information was only available for the first two stages of the bay leaf value chain in Uttarakhand (producers/collectors and local/district traders); little knowledge could be shared for the subsequent stages. There were around 20 to 30 medicinal plants traders in the downstream markets in the plains. According to stakeholders, further grading of bay leaves can be done, but the terms and categories were unknown. Regarding consumption, participants indicated that most bay leaves are consumed as spices or used in traditional medicine.



Figure 6: Value chain map (initial) - Najmola Valley India, 2002

At the nursery level, stakeholders estimated the cost of production per sapling at approximately IRs 7. These plants were sold to producers for about IRs 10 to 12 per plant yielding an estimated profit of 25 to 30% for bay leaf nurseries. Producers incurred an additional cost of IRs 50 per tree for the plantation, with the first harvest only after five years, as in Nepal. Participants indicated that another IRs 20 per kg was incurred for collection, IRs 1 per kg in royalties/taxes, and IRs 3 per kg for transportation. Storage expenses were unknown, but 500 grams (or 2.5%) was the approximate storage loss per 20 kg bag. Stakeholders were not aware of any hidden costs for producers/collectors.

The collectors usually sold bay leaf to village contractors for IRs 8 to 10 per kg; the contractors, in turn, sold to village traders for IRs 12 per kg. The village traders then sold the leaves to wholesalers for IRs 18 to 20 per kg. Stakeholders discussed that, at this level, there are several hidden costs. Of even more concern was the fact that there were no grading standards for bay leaf in place at the upstream level. The processing done at the producer/collector level was limited, as in Nepal. These upstream actors concentrated on drying and packaging the leaves, only sometimes completing initial sorting and grading. This contributed to the non-transparent pricing system, which narrows the bargaining capacity of upstream actors.

Generally, at the village trader level, bay leaves are further sorted, graded, and, if needed, dried. Packaging was done by the village traders, who sold directly to wholesalers and other forwarding agencies. Under the current MAP marketing system in Uttarakhand, these products have to be sold in the ‘mandis’ (market yards) set up by the Uttarakhand State Government through the Uttarakhand Forest Development Corporation (UAFDC).

If their product derived from private land, producers/collectors primarily sold to local and district traders. Farmers need to obtain a permit for trading from the Herbal Research and Development Institute (HRDI). If bay leaf is collected from government land, then only the UAFDC is entitled to purchase it. Final packaging was only done by private traders; government agencies opt to sell directly to private industry. Private traders sell their merchandise to wholesalers and other forwarding agencies.

### Market potential of bay leaves

Bay leaves from India and Nepal are traded in the large wholesale markets of Uttarakhand at Tanakpur and Ramnagar. The estimated size of the Uttarakhand market was 1400 tonnes per year; it was estimated by traders to be growing at approximately 5% per year. In Ramnagar, bay leaf volumes increased by 40% and prices by 61%, in the five years from 2003 to 2007 before the project started (Table 2). The wholesale price of bay leaves in Tanakpur was the same as in Ramnagar. Tanakpur received up to 500 tonnes of bay leaves from Nepal each year (unofficial figure), as well as sizeable supplies from North East India and other cultivated sources in Uttarakhand. These markets supply to larger wholesalers and exporters in different parts of India.

The end uses for bay leaf are as a spice (90%) and for household use (10%). The spice sector is dominated by several large and small companies selling under different brand names in different parts of the country and exporting worldwide. Bay leaf powder is a major ingredient in Indian spices, hence, its use is expected to continue and increase. As almost 90% of bay leaves are used in the spice industry, it was difficult within the current project framework to estimate the size of the industry, which is large and composed of diverse products. However, most of the raw leaves from the



Table 2: Volumes and prices of bay leaves in Ramnagar wholesale market, Uttarakhand (2003–2007)

Year	2003	2004	2005	2006	2007
Quantity (tonnes)	105.5	125.50	118.80	126.0	139
Purchase price/kg (IRs)	17.75	20.75	21.20	23.60	25.40
Sale price (IRs)	20.50	24.50	25.40	28.80	33.20

project sites were traded in the wholesale markets of Tanakpur and Ramnagar, and these state level markets were sizeable enough to be considered as end markets for the action research target groups of Chamoli and Udayapur. The market trends (Table 2) and the prices paid to the collectors and farmers from India and Nepal strongly support the assumption of potential for long-term income reliability, with scope for further increases for the target groups.

### Understanding bay leaf value chain governance

There are strong underlying inequalities between upstream and downstream actors in the bay leaf value chain, and within the different target groups of upstream producers. These power differences are intangible, multiple, and intertwined, and thus difficult to pinpoint.



The key feature of the value chain structure in Nepal was the presence of a large buyer near the production sites. This helped the farmers to engage proactively with the trader and created opportunities for a win-win scenario for both. Policy is a major aspect of governance and is a constraining factor in the bay leaf value chains; it leads to the imposition of illogical taxes, promotes the nexus between traders and enforcing agencies, and encourages the presence of multiple stakeholders, all of which affects returns to producers. At the project site in India, the bay leaf value chain was almost non-existent and followed the structure for all species of MAPs sourced from state forests. The policy and legal set up requires specific rules and regulations to be followed and engenders dependence on lengthy government processes and specific departments, which are different for cultivated and wild species.

Wholesalers and traders showed no interest in establishing contractual linkages with producers/collectors. Furthermore, services to producers/collectors were rare and coordination of their supply chain was weak. Traders in distant trade centres in India dominate the chain and set the terms of engagement. They define the quality standards and prices, which are unknown to upstream actors. Trade was mostly conducted on the basis of trust and long-term commitment.

### SWOT analysis of bay leaf as an economic resource at the project sites

The results of an analysis of the strengths, weaknesses, opportunities, and threats (SWOT) in relation to bay leaf at the project sites are summarised below.

<p><b>Strengths</b></p> <ul style="list-style-type: none"> <li>• Quality products; mostly organic by default</li> <li>• Knowledge available to target groups for production</li> <li>• Cultivation practised in forests and on private land</li> <li>• Increasing market demand</li> </ul>	<p><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li>• Communities lack knowledge of markets</li> <li>• Low value addition at the local level</li> <li>• Unorganised production and lack of upstream coordination of the VC</li> <li>• Poor harvest and post harvest technologies</li> <li>• Policy hurdles in production and marketing</li> </ul>
<p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>• Improved local value addition</li> <li>• Organised production and marketing</li> <li>• Contracts with the private sector</li> <li>• Readjustment of policies in favour of the poor</li> </ul>	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>• Unsustainable harvesting due to increased market demand</li> <li>• Poor and marginalised discriminated against by the elite</li> <li>• Market price fluctuations</li> </ul>

## Upgrading Strategies

### Design

After the detailed value chain analysis, the different upgrading options were assessed. Upgrading strategies were developed in a participatory manner building on ICIMOD's and its partners core competence in the MAPs sector and its experience in the region. The most important aspects in developing a pro-poor value chain for bay leaf were social mobilisation and designing systems and processes to mainstream the trade of bay leaves while working with highly fragmented and diverse stakeholder groups. The role of strong, efficient, and committed facilitators was vital to success. The importance of policy in the MAPs value chain (e.g., harvesting and marketing regulations in India, and tenure and collection/transit permits in Nepal) could not be overlooked in developing upgrading strategies. The selection of the value chain strand (i.e the form of end product or market) was based on an assessment of risks and rewards for the target group. In India, the leaf strand was the most practical as the collectors could sell leaves without requiring further investment. Also, as long-term access to resources was not assured, investment in value added products like powder was not feasible in the short term.

In Nepal, the leaf strand was also selected as Nepal is the largest exporter of raw bay leaves to India. Also, the market for oil within the country was limited and the demand fully met by one oil processor in Udayapur. The issues, upgrading strategies, and actions are shown in Table 3.

Table 3: Issues, upgrading strategies, actions, and action points in the bay leaf value chains

Critical issues	Upgrading strategy	Action	Action point
Lack of value chain understanding and inequitable participation of target groups	Vertical contractualisation	Facilitate market access and income security through improved upstream value chain coordination and contractualisation	Upstream trading nodes (producers, local processors, and local traders)
Disorganised production	Horizontal coordination	Grouping and clustering of collectors and producers to coordinate production and increase bargaining power	Collection and production nodes (women collectors/ cultivators)
Unorganised selling	Process upgrading	Improve coordination of trading at upstream level	Collection and production nodes
Poor harvest and post-harvest techniques	Product upgrading	Improve bay leaf quality to meet market demand while minimising any negative impacts on the environment	Production and local trading node
Policy and regulatory constraints, particularly relating to (i) land tenure, and (ii) collection and transit permits	Supporting strategy – value chain coordination upgrading	Facilitate the creation of favourable policy and institutional environment for bay leaf production and trade in Nepal and India	Institutional and socioeconomic framework mobilising and reaching out to larger community groups, government, and other stakeholders

### Strategies adopted

The upgrading strategies adopted were those with the potential to produce the greatest impact on the ability of the target groups to participate in the bay leaf value chain.

#### India

In India, the supporting strategy 'value chain coordination' was the most important as accessing the bay leaves in government managed forests was a major challenge. In order to implement an innovative practice in marketing, it was important to get the commitment of state authorities. The other upgrading strategies, in relation to product and process, and horizontal and vertical coordination, were important to realise the benefits of the new opportunities.

The significant changes included the formation of producer groups, the introduction of new functions/processes (grading, sorting, packaging, and storage), the establishment of local auctions (floating mandis) as a means of marketing, and opportunities to target new strands through value added products. Policy readjustments like improved access to resources (through permits granted directly to producers/collectors) and the establishment of local auctions, created new opportunities for the development of the overall MAP sector in Uttarakhand and beyond. At the upstream level, the gross margins of the collectors increased from 10% before intervention to 57% after the intervention. Figure 7 shows the upgraded value chain map for the Indian site.

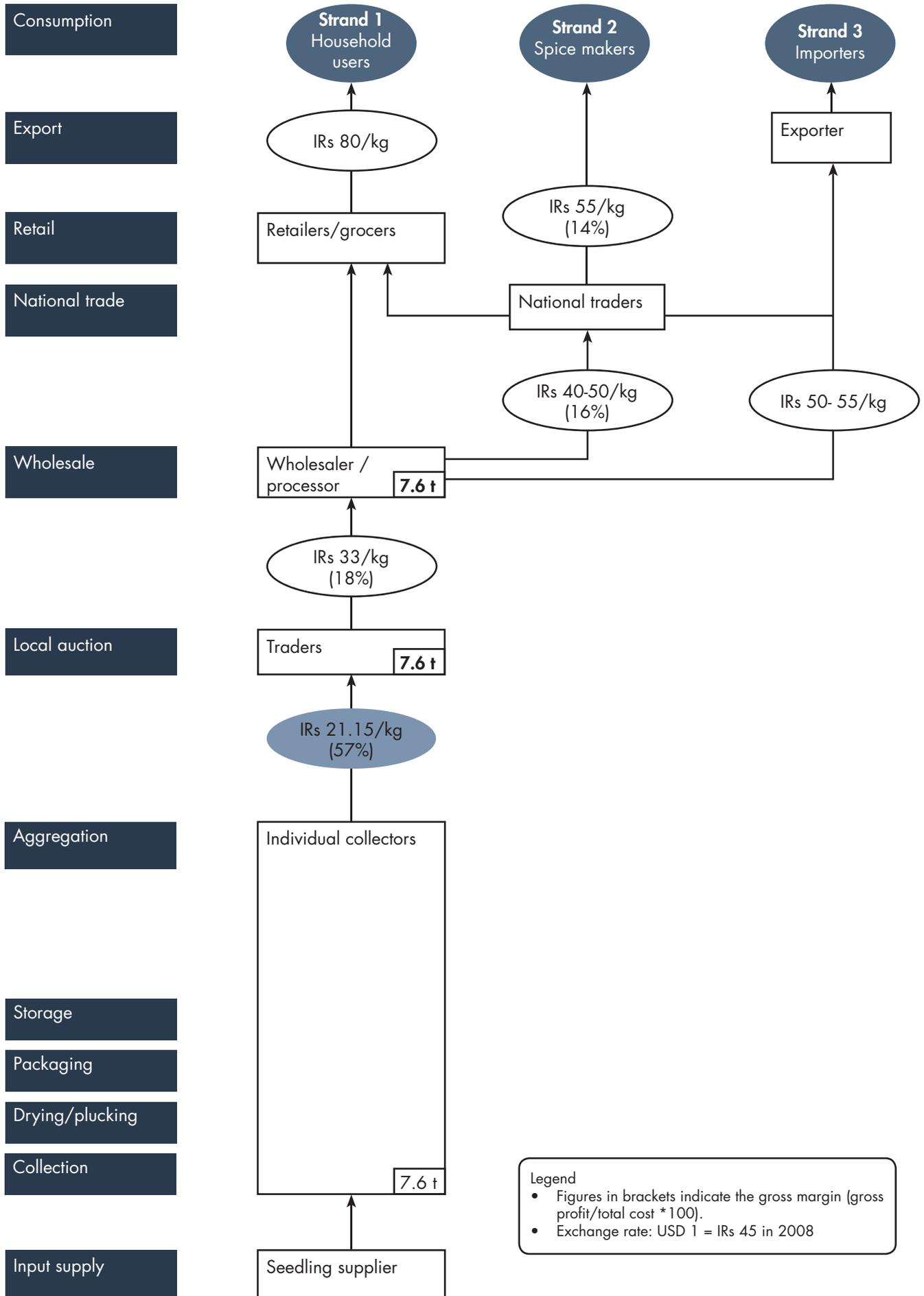


Figure 7: Value chain map (post upgrading) - Najmola Valley, India, 2009

## Nepal

In Nepal, vertical contractualisation was the main upgrading strategy, which was reinforced by process and product upgrading, and horizontal coordination. The contractualisation process guaranteed better prices and gains in terms of information and technology flow, which was supported by homogenous production and certification. Horizontal strategies focused primarily on empowering producers, mainly women, while vertical strategies targeted poverty dimensions. Process and product upgrading impacted on environmental, poverty, and gender aspects.

The significant changes included the formation of producers groups and cooperatives, and the introduction of new functions/ processes of grading, sorting, packaging, and certification. The changes attracted increased prices, resulted in higher volumes, and allowed producer groups to diversify into new markets. The turn over of bay leaves at the upstream level increased by 50% from NRs 4,230,000 to NRs 8,510,000 after the intervention. The gross margin of the producers increased from 9% to 36% in the process. Figure 8 shows the upgraded value chain map for the Nepal site.

## Implementing the Strategies

### Institutional strengthening and development

Producer groups were formed to better coordinate the upstream value chain activities. Before project intervention, collectors and producers were unorganised, they had poor access to information, and their capacities in different aspects of bay leaf management were limited. As women in mountain regions play an important role in bay leaf collection, women's groups or groups with equal representation of men and women were formed in the target areas as an entry point for project interventions and for the dissemination of new information and knowledge on bay leaf management. A gender balanced approach was adopted from the beginning of the project to address the needs of men and women equally. The process also ensured that a common standard or code of conduct could be established. As the issue of unsustainable management was a major worry in the unregulated local system that was in place prior to the project intervention in India, the van panchayats (village forest councils) were involved in the harvesting and in monitoring of this process. The Federation of Community Forestry Users Nepal (FECOFUN) played an important advocacy and management role in Nepal.

### Enabling collective action

The formation of groups enabled appropriate monitoring of the harvesting process and ensured that leaves of the desired quality were harvested within the best harvesting norms established by the enforcing agencies. Producers also changed their harvesting practices by adopting less damaging methods, like harvesting with hands rather than knives, for trees on private land. Small farmers and a few landless families were facilitated to enter into share cropping with large farmers, who were not able to harvest and transport to market all of the leaves on their trees. The poor farmers received a 60% share of the harvested leaves. The formation of local groups increased the bargaining power of the collectors and cultivators; they obtained a higher price for their leaves as the groups possessed the required volume to enter into contracts with buyers and to participate in auctions.

### Streamlining upstream bay leaf value chains

Following the formation of groups, issues related to the organisation of harvesting, drying, grading, packaging, and marketing were discussed with different stakeholders. The process was set for the flow of collected bay leaves from the collectors to the storage centres or traders. This led to improved coordination of post harvest and trading at the upstream level. A local bay leaf quality certification system was initiated in Nepal. Under this arrangement, trained supervisors from each of the six villages approved the quality of bay leaf from producers to be sold to the Thapa Herbs Company by signing a memo. Similarly, in India, quality supervisors were appointed from the self help groups (SHGs) to monitor the sustainable harvesting of leaves and quality assurance (proper drying, packaging, and so forth) of the product in collection centres. Proper systems for harvest and post harvest ensure that the bay leaf is certified as organic from the state certification agency. Similarly, on evaluating compliance with International Standards for Sustainable Collection of Medicinal and Aromatic Plants (ISSC-MAPs), it was observed that the process of collecting and managing the resource met 60 to 70% of the principles and criteria ([www.fwf.org](http://www.fwf.org)).

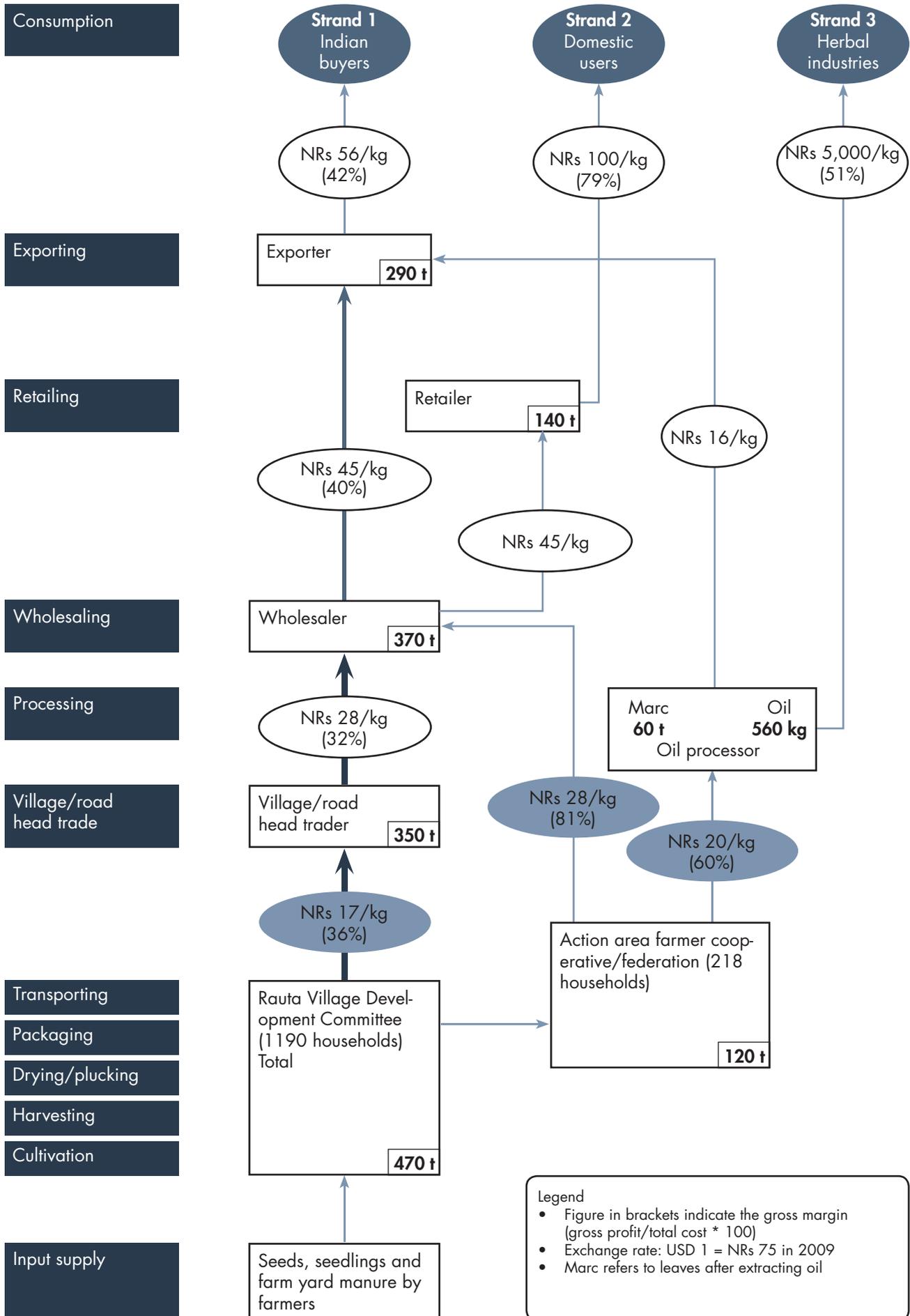


Figure 8: Value chain map (post upgrading)-Nepal, 2009

## Learning from markets – standards, grades and certification

A series of training programmes on collection, drying techniques, grading, packaging, and storing were provided to the target groups. Specialised government and private sector agencies were engaged to impart training and suggest models to establish the process of upgrading the chain at the upstream level. The idea was to ensure that product upgrading was linked to market preferences by learning from the traders. The traders with whom the contract was signed in Nepal provided services to the producers as part of the contract, which helped them to conform to acceptable quality standards.

Following the training, upstream producers adopted proper drying, grading, and packaging practices. The harvested leaves are allowed to wither for a period of about two weeks in the shade. The aim is to achieve the desired level of moisture content (approximately 50%) and colour (light green). Infected and broken leaves are removed. After drying, the leaves are graded into three categories: (i) best quality – green and thick leaves without twigs; (ii) medium quality – green, but thin and narrow leaf; and (iii) poor quality – yellowish brown, thin, and broken leaves with some holes.

The above practices had an impact on income (higher prices), the environment (sustainable harvesting), and gender (empowerment of women to participate in the bay leaf value chains, direct income into their hands, and savings).

## Policy readjustment and strategic collaboration in India

### Improving access to bay leaf resources – collection permits

In Chamoli district, bay leaves are mainly found in reserve forests. The collectors of bay leaves at the project site did not have legal access to bay leaves in the forest. Reserve forests are managed as per the Forest Department (FD) working plan. This plan lays out the different products eligible for extraction at specific times, often on a rotational basis. At the project site, the range was only open for collection of bay leaves once every five years, and the Forest Department issued permits to traders for collection. Under this system, people's participation in the management of the resource and the benefits from the harvest was negligible. These issues were raised with the Forest Department and received due attention from the Principal Chief Conservator of Forests (PCCF), Government of Uttarakhand. After a series of discussions, the Forest Department waived the rotation term on a pilot basis to allow harvesting of leaves in the forest range, acknowledging that the area had not been harvested since 2003. In a first-of-its-kind initiative in the state, collection permits were issued to the van panchayats (village forest councils) instead of to the traders. The van panchayat then transferred the harvesting rights to the self help groups (SHGs) formed at the project site on the basis of a royalty of 0.80 paisa payable to the Forest Department and a fee of 8% of the final price to the Forest Development Corporation (FDC).

### Creating pro-poor market structures – local auctions

The Government of Uttarakhand initiated an innovative system of streamlining the trade of MAPs and NTFPs by establishing 'MAPs mandis' (MAPs market yards). As per the government order, all MAPs produced in government forests must be auctioned in these mandis. However, the auction centres are far from the production site (around 190km). Poor collectors and producers were disadvantaged due to the distance and were at the mercy of local traders to sell their produce. Transportation required cash and trading required skills, which the upstream producers did not have. A local marketing arrangement was identified as a strategy that would help provide maximum benefits to the collectors. The possibility of holding local auctions was discussed with the Forest Department and the Forest Development Corporation as a way to benefit poor collectors, enable them to participate in the marketing process, and to empower them. Appreciating the value of the idea, the Forest Development Corporation organised a local auction in one of the production villages. The Himalayan Action Research Centre (HARC) the project partner in India, facilitated the participation of buyers from outside the state, with whom an informal agreement was made at the start of the project. This auction has become a model for replication in all mountain regions, and has already been initiated for other NTFPs by the Forest Department in Uttarakhand.



## Contractual arrangements in Nepal

Producer groups at the project sites were provided with market information and facilitated to interact with buyers to understand the market and marketing mechanisms for bay leaves. The local partner helped them to identify the most rewarding strategies, while reducing market risks. This strategy was taken up very strongly in Nepal where producer groups were facilitated to negotiate with the traders on quantity and price for different grades of bay leaf. In 2008, producers in Udayapur signed a six-month contract with Thapa Herbals Private Limited to supply 100 tonnes. The upstream producers received NRs 16 per kg for the best quality leaf, NRs 15 for medium quality, and NRs 13 for poor quality leaf. Before the contract was signed, the rate ranged from NRs 8 to 10 per kg, and producers had no information on quality grades. In 2009, the producers' cooperative again negotiated prices for a new contract. The trader was satisfied with the progress made in 2008 and initially offered a price of NRs 18 per kg for best quality leaf. But strong bargaining by the cooperative members resulted in a price of NRs 21 per kg for best quality leaf, NRs 20 for medium quality, and NRs 19 for poor quality.

## Impacts of Value Chain Upgrading

The impacts of value chain upgrading were analysed under the three crosscutting themes of the intervention: poverty, environment, and gender.

### Poverty

#### Average household food security status of target beneficiaries

Food security is influenced by many factors including area of landholdings, productivity, seasonal variation, climate change, geographic conditions, and sources of income. In this project, food sufficiency was assessed based on the quantity of farm production and amount of income earned from other sources. Baseline data revealed that at the start of the project almost half of the households (46%) in Nepal had food sufficient for 4 to 6 months and 54 percent had food sufficient for 7-12 months (Figure 3). The increased income from the sale of bay leaves increased the food security of the target households by 3 to 4

months on average. This was supported by testimony: for example, the research team met an old woman with her grandson carrying 35 kg of bay leaf to the downstream market for sale. On return from the downstream market, she said that with the money she earned from the sale of bay leaf she had bought 35 kg of rice, which would be close to the requirements of a family of average size (5.5 members) for a month.

At the Indian project sites, at the time of baseline survey, more than half of households (53%) had sufficient food for 3-4 months from their own farm production, while the remainder had sufficient for 5 to 6 months. The impact of the VC intervention on food security in India was not significant because of the small volume of leaves collected from the state forests. However, the margin received by the poor producers in India was exceptionally high – almost double that in Nepal.



#### Income earned from the value chain

The baseline studies showed that an overwhelming majority (85%) of the sampled households in Nepal were below the poverty line in terms of income at the start of the project, and sampled households earned NRs 3,350 on average from sale of bay leaves. After implementing the bay leaf value chain upgrading strategies, the upstream producers in Nepal were able to sell almost 100 tonnes of bay leaf at the increased price of NRs 20 per kg. On average, each bay leaf selling household earned an additional NRs 4,000 in 2008; in 2009 each household earned NRs 9,700 on average, nearly triple what they had earned in the past (Figure 8).

In India, the low volume of harvest (due to procedural delays) meant that the impact on incomes was lower. Nevertheless, each collector earned, on average, IRs 3,150 in 2009 by harvesting an average of 1,500 kg of bay leaves (Figure 9), an increase from IRs 2,500 in 2003.

### Proportion of total income earned from the value chain

At the time of the baseline survey, income in Nepal from bay leaf sales was 10% of of total household income; this increased to 20% following the project (from NRs 3350 in 2008 to NRs 9750 in 2009). Currently, this is almost equal to the income from livestock at the time of baseline survey. In India, the share of household income from bay leaves doubled from 2% to 5% (Figures 10, 11).

### Reliability of income from the value chain

The demand for bay leaves in the Indian markets has been increasing steadily over the past few years. The price increase for bay leaf is mainly due to an increase in the awareness of upstream producers of market prices, and also due to improvements in the quality of the leaf. The enhanced knowledge of upstream producers and improved skills in quality control will ensure the reliability of income from bay leaves in the future, provided market prices and demand for bay leaf continue to increase and collectors continue to benefit from policy readjustments and change.

## Environment

### Area of production

The area of production of bay leaf has increased by almost 10% in Nepal and 5% in India. This is mainly because upstream producers have planted bay leaf trees on vacant terrace risers (walls), so they have not replaced any agricultural crops. Seeds are collected from the wild and also from nurseries.

### Annual yield

In Nepal, sustainability is estimated by calculating the total number of harvestable trees in an area and the yield for each age class; from the total yield, 50% is estimated to be harvestable. The yield increase is mainly due to sustainable harvesting practices adopted by the local people. The yield assessment due to sustainable harvesting practices revealed that bay leaf production is higher (almost double) when harvested by handpicking, compared to harvesting by knife. The annual yield of bay leaf was 114 tonnes (10 tonnes wild and 104 tonnes from cultivated land). This is only half of what could be sustainably harvested. Annual production per tree ranges from 30 to 50 kg, depending upon the temperature and fertility of the soil.

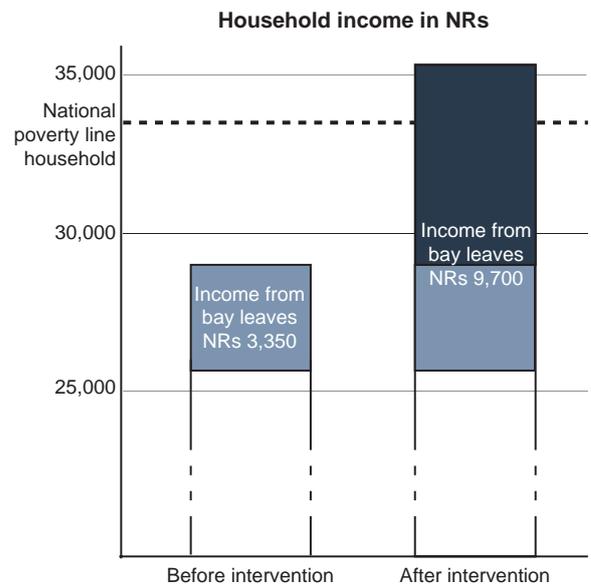


Figure 9: Average income per household from bay leaf value chain (post upgrading) in Udayapur, Nepal

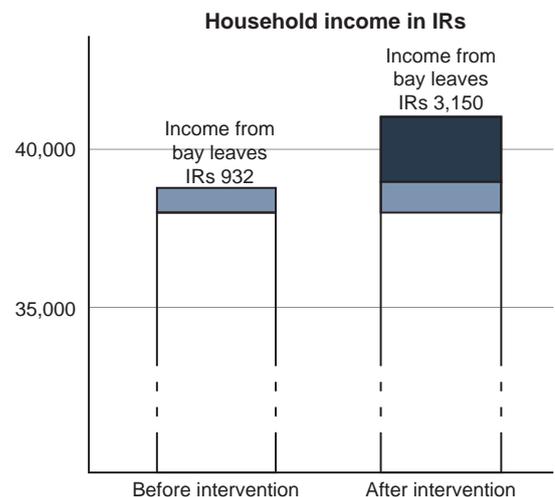


Figure 10: Average income per household from bay leaf value chain (post upgrading) in Chamoli, India

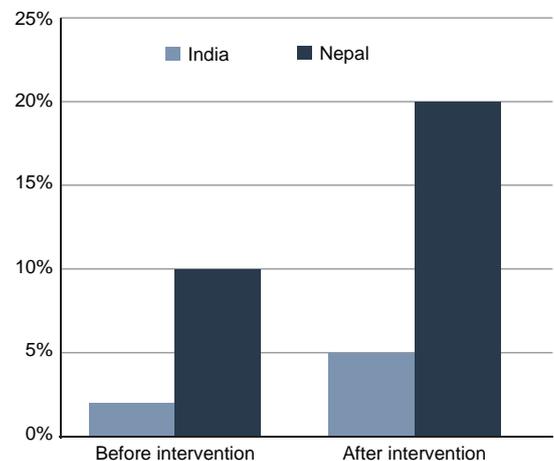


Figure 11: Contribution of bay leaf to household income before and after the project

In India, only 50% of the lower two-thirds of leaves are harvested, as per State Forest Department rules. An inventory carried out at the beginning of the project identified 2000 trees of harvesting age, providing an amount of 50 tonnes of leaves, calculated at 25 kg per tree. Of these, only 7.6 tonnes was harvested. This indicates that forests were not negatively impacted by harvesting.

### Productivity

Bay leaf productivity was 6 tonnes per hectare in Nepal after the intervention. Previously, harvesting with a sickle, the productivity was 2.8 tonnes per hectare.

### Relative importance of different sources of product

In India, awareness of the need to protect and conserve forests has increased as a result of the improved harvesting process. In Nepal, trees on unclassified land adjoining farmland are also better managed now (less removal of bark) due to the higher returns.

### Production and post harvest losses

Previously, the loss from carrying the leaves from the collection area to the village traders was estimated at 8% of the total harvest. Post-intervention, due to improved harvesting and post harvest techniques, losses have decreased by 50%, and are now mostly due to loss of moisture rather than from overharvesting; producers do not waste the harvested leaves and only harvest those leaves that can be sold.

## Gender

### Total time invested in value chain activity

At both project sites, pits are generally dug by men, and nursery work, transplanting, and harvesting activities are mainly done by women. Transporting products from the upstream area to downstream is also mainly done by women. On average, two-thirds of the time spent on bay leaves is invested by women.

### Ability to meet household responsibilities

Post intervention, women were found to have more control over the cash income from bay leaf production and contributed to the household budget, in contrast to the pre-project situation in which male members of the household controlled the household budget. Now, male household members are positive about the involvement of their female partners in the economic aspects of bay leaf production and marketing. Some husbands provided the capital needed for their wives to buy a share in the cooperative. The relationship between the men and women involved in bay leaf production has improved, positively affecting gender relations.

### Proportion of cash income earned from value chain

It is difficult to estimate what proportion of income from bay leaf production goes to men and women, but evidence shows that both men and women have benefited from the additional income in terms of food security, education, repayment of loans, and ability to buy clothes and other household items. Eleven girl students at the project site in Nepal who had dropped out of school are now enrolled using the additional income earned from bay leaves. Specifically, men generally prioritised paying off loans, repairing the house, purchasing livestock, while women tended to spend more on children, clothing, and so forth.

## Strengthening upstream coordination of value chains

- **Facilitating critical reflection:** The project facilitated the critical reflection of group members on the institutional changes that took place during the action research period, and the outcomes of these changes.
- **Transforming representation:** The project increased the leadership roles of women and people from marginalised groups in the value chain development process.
- **Building and bridging voices:** Sub-committees were used as a mechanism to enhance input to decision-making and information flow.
- **Devolving responsibility:** Responsibility was devolved to an action group to take the lead in detailed planning and implementation.
- **Networking:** Linking with external actors is crucial for continued access for upstream producers and for financial and technical support.

## Empowerment of women

In both countries, the households that participated in the bay leaf project were clustered into six women sub-groups, with some men in the group to support group activities. These groups were federated into a network. This network was later registered as a cooperative in Nepal. The sub-groups met each month and shared their learning. All of the members of the cooperative were trained in cooperative management and bay leaf marketing aspects. Members mobilised savings to generate working capital for the functioning of the cooperatives by purchasing shares. More than half (57%) of the cooperative members in Nepal were women. In India the groups were linked to the larger cooperative that HARC developed for its livelihoods programme in the project area. Women's participation in training events and their representation in sub-groups and committees has enhanced their ability to take part in decision making. Discussions with women's groups revealed that they are now able to prioritise their own activities, whereas prior to the intervention they had been dominated by men.

## Lessons Learned and Discussion

Value chain development for high value products can be detrimental to the participation of the poor if a generic approach is taken to developing competitiveness in the chain and to value chain promotional activities focusing only on downstream actors. People in less favoured regions such as mountains need a specific focus and interventions designed to address their specific issues, which cannot be achieved through the 'trickle down' affect. In addition, value chains can exclude the poor and increase their vulnerability. They can also promote environmental degradation due to excessive market pressure and overharvesting, and cause social inequity and gender imbalances. Hence, this project adopted an action research approach designed to be implemented with key national partners to understand the impact of value chains on poverty, environment, and gender.

Positive changes emerged in value chain practices and in the distribution of benefits among target groups across the value chain as a result of the implementation of the participatory action research process in the study area. However, several challenges and questions remain. The first challenge is the fact that successful action research on the value chain approach relies on the ability of upstream producers and other actors to critically reflect upon their own attitudes, capacities, and resulting behaviours, as well as on their governance and management practices. Value chain interventions need to develop a greater understanding of, and interest in, learning and inclusive management to bring about a meaningful shift in governance and in the organisational structure at the grass roots.

The second challenge – or dilemma – relates to the role of downstream traders in the overall value chain approach after the exit of the research teams. The engagement of downstream traders appeared to be critical to triggering and supporting the feedback loop and bringing about the changes that resulted from the project intervention. Without their active involvement, the project could not have been implemented.

The third challenge relates to the quality of facilitation of the whole value chain approach. Strong facilitating partners are important to strengthen new ventures and affect change in the value chain. In India, the desired policy changes could be brought about because of several interactions held between ICIMOD and the facilitators. However, in Nepal, ICIMOD had to take a more proactive role in project implementation as the local partners were new to implementing community-based value chain projects.



A key factor in the continued success of upstream value chain interventions is sustainability and overall chain governance.

In Nepal, as a result of the contracts with traders, and the resulting competition, three other traders in the local market had to raise their prices to NRs 16 (USD 0.23) per kg. Therefore, producers from outside the action research areas also received a higher price. The demand for bay leaf is on the rise and private sector partners increased their price to NRs 20 (USD 0.27) in 2009. Traders from outside the district are now willing to pay NRs 25 (USD 0.34) per kg. Hence, the project created an environment for healthy competition among bay leaf traders with the result that the prices increased significantly. A key lesson is that empowered communities with strong bargaining power can negotiate fair and equitable deals with traders. This was a tremendous empowerment process and the awareness of farmers/collectors groups about marketing systems (contracts and floating markets) for MAPs in the project areas has improved significantly.

In India, the lessons from the first two years of action research are being implemented solely by the Forest Department, with minimal involvement by ICIMOD and the local NGO (non-government organisation) partner. In the meeting with working plan officers in August 2009 organised by the Forest Department, there was a firm commitment to propose MAPs working circles in the forest working plans and a plan to establish 58 floating markets (mandis) was announced by the state.

Public private partnerships can motivate private sector actors to invest in bay leaf enterprises. The private sector would normally participate if it is ensured a regular supply of quality products, as in the case of Nepal. However, farmers in Nepal did not readily accept investment by the private sector in the bay leaf cooperative for fear of domination at a later stage. There is a need for regular dialogue and negotiation between upstream and downstream actors. Generally, traders in the MAPs sector are unfair to producers, and contractualisation is not common. Traders who follow an ethical approach in business are more responsive to collaborating with producers.

A collaborative interface is needed between upstream producers and downstream traders or other actors (District Forest Office, District Cooperative Office, Forest Department, NGOs) in order to deal with conflicting interests. This interface, as experienced in the research project, can bring together different views and give an outside perspective on a situation; it can also raise critical questions or observations provided by the VC actors and facilitators. Such an interface may reveal (or resolve) conflicts and power imbalances in order to progress in the desired direction. Regular shared learning exercises will also help to deal with conflicting interests. This was a very strong learning from the action research process.

There is a need to resolve potential conflicts at the planning stage. Local traders who are bypassed due to chain upgrading need to be engaged effectively. Their role as facilitators in the local mobilisation process is highly relevant and pertinent. They provide information on market requirements and market channels, and are also informants about bay leaf quality. The engagement of local traders had a positive effect on the coordination of upstream activities, as well as increasing the information and knowledge of collectors. The action research essentially demonstrated that local traders must pay competitive rates for bay leaf to stay in business, as the upgrading strategies had an impact on overall market prices.

## Conclusion

ICIMOD's experience in HVPs indicates that value chains in mountain regions are different and require a differentiated interpretation. HVPs like MAPs and NTFPs are vital resources in terms of biodiversity, local health care, and livelihoods. Dealing in subsectors such as MAPs requires a strong understanding of species ecology and conservation approaches to develop local management strategies, such as cultivation. Research needs to focus on building on, and adding value to, traditional knowledge, while including modern scientific practices. In addition, an analysis of women's and men's different roles in protection, propagation, management, and harvesting of in situ and ex situ MAPs needs to be incorporated into community-based MAP resource management practices. Synergy and regular dialogue between local communities and trading and enterprise sectors should be promoted to ensure that commercial priorities for cultivation and quality improvement are taken into account. The action research described here demonstrated that appropriate technologies alongside effective policy and legal frameworks for the in situ management of locally prioritised species are integral to effective strategies for the conservation and sustainable management of MAPs.

As the readjusting of HVP value chains will face stiff competition from traditionally established market channels and forces, upgraded value chains need to be based on recognised comparative and competitive advantages for their success and

survival. In the process, innovations in designing systems and processes that are in line with mountain specificities are important. Traditional upgrading strategies may not be able to unleash the true potential of the resource and region.

In India, a two-pronged approach was designed: improving access for local communities to bay leaf resources and empowering them to participate equitably in markets. The forest department agreed to pilot a change from the blanket 'five-year' no harvest approach, to a species specific and appropriate regular controlled harvest approach. As a trial, collection permits were issued for the first time to collectors of MAPs, bypassing contractors, by actively involving the van panchayats. This was hailed as a pro-poor policy initiative by different stakeholders in Uttarakhand and beyond. This provided an opportunity for the poorest families to generate additional income during a season when no other economic activities were locally accessible. Some critical observations for successful pro poor VC promotion are highlighted in the box. A major success of the action research in India was the development of market linkages in the form of 'floating mandis' (markets) while working within the overall policy framework. A local auction was the only way to empower collectors who were operating with minimal capital, infrastructure, information, and knowledge. It was also essential to ensure that the bids were high enough to obtain a favourable deal. The idea was to reduce the risks and increase the benefits for collectors, a core strategy adopted in ICIMOD's value chain approach. The pro-poor elements in upgrading strategies need to be kept in mind by the facilitating agencies, and could cover a series of aspects such as organising target groups to advocate for policy change.

The value chain upgrading process has created a lot of curiosity among government agencies, international development partners, and NGOs in Uttarakhand. The Uttarakhand Forest Department has announced the establishment of 58 new floating markets close to the resource catchments in different parts of the state. At least five different products have been identified for similar interventions. Lessons from the project are in the process of being integrated into the work plans of the Forest Department with proposals for establishing species specific harvesting in each forest range. Floating markets have proved to be a good solution to market access for HVP collectors and producers within the overall policy and institutional context of the state. These could be supplemented by collection and processing centres, storage facilities, value addition (cleaning, grading), online auction notification, and so forth. An important upgrading strategy in the future would be to utilise the producer's institutions to market value added products from leaves, generating employment and higher income at the village level.

In Nepal, the action research focused on ensuring the registration of private trees with the District Forest Office (DFO). Bay leaf trees are often grown on private lands, but as this land is not registered with the Land Revenue Department and the trees on such lands are not registered with the DFO, the harvesters have to pay a royalty, as though they were collecting from government forests. This resulted in a loss of NRs 2 per kg for the farmers or NRs 2,000,000 (USD 2,700) in total for the action research site. This issue was taken up with the DFO and Land Revenue Office. The farmers have now deposited their land papers with the Forest Department and are expecting some action. However, the fees that the Land Revenue Department charges are high, and the collectors find it difficult to pay. These fees are charged on a per plot basis; fees are charged for each additional plot if land is in the name of a different family member. This increases the cost significantly. Moreover, the Land Revenue Department does not provide a travel or daily allowance to its staff for field visits. All of these costs are borne by the farmers. The process takes a long time and needs constant follow up and negotiation, which is beyond the

## Some checks and balances

**Domination by elites:** It is possible that the rich and powerful may capture most of the benefits once the value chains become profitable.

**Information and knowledge:** Information and knowledge on markets and on the dynamics of the value chain are important to generate pro-poor value chain strategies.

**Policies:** The policies governing HVPs need to be implemented in their true spirit in order to transfer the desired benefits to the poor. Policies are one of the most serious obstacles to the poor participating in HVP value chains.

**Gains:** Value chains can be of a long rotation at times (meaning that the receipt of income is delayed). It is important that the target groups receive immediate gains in the initial period to ensure sustained interest and commitment.

**Upstream value chain facilitation:** Upstream value chain facilitation requires a competent and efficient committed team, as well as collaboration with multiple stakeholders and national partners.

capacity and reach of most producers. This is a policy challenge that needs to be addressed for higher gains to communities. The main success was the empowerment of the bay leaf producers through access to improved market information and development of greater bargaining power. The horizontal coordination among the producer groups, cooperative, and local traders, enabled bay leaf producers to negotiate the price and quantity of different grades of leaves with the district level traders and enter into a contractual agreement. The process not only helped improve the quality of, and price received for, bay leaves, it also helped producers to obtain support from the traders for managing the quality of the harvest. This was a win-win situation for both the traders and the producers. The improvement of the bay leaf value chain contributed significantly to the household economy of the poor producers, thereby reducing poverty.

Gender relations at the project sites have improved significantly as a result of education, exposure, and training carried out by different agencies in the target areas. However, in the context of the project areas, income is normally considered as for the household, even when earned by men and women separately, and is spent on a gendered basis depending on time, size of income, and the economic situation of the family. Participation in value chains and the entrusting of decision making roles to women was accepted by the men in the action areas. With regards to sustainable resource management, the strong localisation of project components with decisions enforced and accepted by local institutions can reduce negative tradeoffs related to income and threats to resources. Locally developed codes of conduct ensured equity in the sharing of bay leaves, sustainable harvesting, and women's access to collection permits. This was a salient feature of the entire action research process in government forests. On private lands, people based their approach to harvesting on personal experience rather than scientific recommendations.

A key question was the extent to which the target groups should be integrated into the action research on value chains. It is suggested that target groups should be involved in all upgrading strategies for value chain development, especially in upstream areas. They should also be included in related activities of downstream value chain functions so as to increase their understanding and knowledge and to improve the terms of their participation in the value chain. For example, carrying out a market survey involving upstream actors in the value chain significantly increased local people's bargaining power. There

is a need to develop a consensus and win-win attitude between the stronger and weaker actors in the chain. This can be done through proper collaborative arrangements, as demonstrated by the action research process.



Overall, the outputs of the action research are highly relevant for and beneficial to the target groups in terms of impact on poverty, environment, and gender. Poverty issues were assessed as a multi-dimensional phenomenon, but in the context of the project, stress was laid on the income from bay leaves. The income of the target groups increased substantially. In Nepal, the average income from bay leaves nearly tripled post intervention, leading to a 20% average increase in household cash income; in India the increase in income was smaller, but still represented an important contribution to household income. The impact of this increased income was visible in the improved food security of households, repayment of

loans, children's education, clothes, and the availability of cash for other household needs, like fitting solar lights.

The results indicate that value chain interventions at the upstream level can produce immediate benefits for poor producers. Results also show that the integration of producers/collectors into the local, national, and global MAPs/NTFP value chains can enhance food security, promote resilience to global change processes, and reduce the poverty of mountain people, and that this can be replicated and scaled up for wider benefits. ICIMOD's role as a regional knowledge centre is highly relevant to HVP value chains due to the transboundary nature of the resource's distribution and the value chains. Sharing experiences and good practices that bridge the local (specificity of upstream value chain characteristics) with the global (specificity of downstream markets) is imperative for promoting sustainable adaptation approaches for poor HVP dependent communities in remote regions.

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## Acronyms and Abbreviations

DFO	district forest office	NTFP	non-timber forest product
HPPCL	Herbs Production and Processing Company Limited	SHG	self help group
HVP	high value product	UAFDC	Uttarakhand Forest Development Corporation
IRs	Indian Rupees	VC	value chain
MAPs	medicinal and aromatic plants	VDC	village development committee
NGO	non-government organisation		
NRs	Nepali Rupees		

Exchange rate US\$ 1 = NRs 73 and IRs 45 in 2008

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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 – Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal, and Pakistan – and based in Kathmandu, Nepal. Globalisation and climate change have 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-downstream issues. We support regional transboundary programmes through partnership with regional partner institutions, facilitate the exchange of experience, and serve as a regional knowledge hub. We strengthen networking among regional and global centres of excellence. Overall, we are working to develop an economically and environmentally sound mountain ecosystem to improve the living standards of mountain populations and to sustain vital ecosystem services for the billions of people living downstream – now, and for the future.



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