

Small Scale Mountain Enterprises in Hindu Kush-Himalaya

Executive Summary

The promotion of rural enterprises is crucial for the achievement of broader development objectives, including poverty alleviation, economic development and the promotion of more democratic and pluralist societies in mountain regions. Horticulture, medicinal herbs, non-timber forest products (NTFP's), livestock products, silk, fibres, and crafts, mountain tourism, indigenous beekeeping etc have a comparative advantage for mountain inhabitants. These have been found to have potential to provide income and employment opportunities locally through holistic and market oriented approaches in the rural and highland regions of the Hindu Kush Himalayas (HKH).

In continuation with the Phase I activities of the Mountain Products Project (MPP), the International Centre for Integrated Mountain Development (ICIMOD)/ Agriculture and Rural Income Diversification (ARID) programme has signed a LoA with FAO to contribute to the project by providing inputs for designing a training programme for the Hindu Kush Himalayas. The activity started with selecting enterprises producing high value mountain products with established market linkages, which were linked to natural resources and conservation of biodiversity in three Regional Member Countries (RMCs) Bhutan, India and Nepal of the HKH. Emphasis was on selecting enterprises that were working under the decentralised natural resources management (NRM) programmes in the region for e.g. community forestry, joint forest management, van panchayats, and community based natural resources management (CBNRM). The project essentially takes a supply chain/value chain/sub sector approach in identifying constraints and bottlenecks in the selected products.

Discussions were held with ICIMOD professionals, literature was reviewed and a set of products and services were identified. Field visits were carried out in Bhutan, India and Nepal and discussions were held with the project staff, producers, processors, and exporters. Based on the TORs and sub sector selection and shortlisting approaches a set of products was identified in consultation with the relevant stakeholders. These include Bhutan: *Cordyceps sinensis*; *Trichoderma matsutake* & Shitake mushrooms; India: Tasar silk and honey & bee products; Nepal: Medicinal plants based products, handmade paper from Daphne species. The problems in the supply chain were identified in collaboration with the stakeholders and means to address them were also discussed.

Discussions with different stakeholders and field observations indicate constraints of the selected product categories in the three countries related to markets, product development and improving productivity, participatory planning, community mobilisation, biodiversity conservation monitoring systems and standards and quality control. Retaining existing market shares through improved product quality and standardisation, customer relationship management, information systems and communications, efficient post harvest technologies, positioning of products and market segmentation are emerging second generation problems that many implementing organisations are currently facing.

It has been observed that many training manuals have been developed over the years that need to be updated and there is also a need to develop training manuals and resource kits that can be customised to different situations and needs even while being used for diverse natural products. Training courses using such manuals should provide hands on experience or learning by doing and simulation exercises to the extent possible. Training programmes should have follow up sessions with guidelines to monitor impacts and deviations from the desired results if any. There should be processes set for ensuring implementation of the learning and for measuring effectiveness. Training programmes on the selected products could also assist to up scale good practices and replicate the success in different regions of the HKH.

The structure and components of the training programme, the target trainees, the training materials, methods of training etc of the regional training of trainers programme will be developed during phase III of the MPP upon availability of co-financing in consultation with the stakeholders. ICIMOD can host the training programme and provide a pool of subject matter specialists to take the process forward.

LIST OF ACRONYMS

AMS-	Agriculture Marketing Services
ANSAB-	Asia Network for Sustainable Agriculture and Bioresources
APPA-	Appreciative Participatory Planning and Action
ARID-	Agriculture and Rural Income Diversification.
ATA-	Appropriate Technology Asia
ATI-	Appropriate Technology India
BCN-	Biodiversity Conservation Network
BSP-	Business Service Providers
Care Nepal-	International Non Governmental Organisation in Nepal
CBNRM-	Community Based Natural Resources Management
CEFE-	Competency Based Transformation of Economies
CFUGs-	Community Forestry User Groups
CIHEAM-	Centre for Advanced Mediterranean Agronomic Studies
DANIDA-	Danish International Development Agency
ECOSS-	Ecotourism and Conservation Society of Sikkim
EODP-	Essential Oil Development Programme
EU-	European Union
FAO-	Food and Agriculture Organisation of the United Nations
GAC-	Gorkha Ayurved Company (P) Ltd
GAFCP-	Good Agricultural and Field Collection Practices
GMP-	Good Manufacturing Practices
GTZ-	German Technical Cooperation
HKH-	Hindu Kush Himalayas
ICIMOD -	International Centre for integrated Mountain Development
IDRC-	International Development Research Centre
IFAD-	International Fund for Agriculture Development
ILO-	International Labour Organisation
IUCN-	The World Conservation Union
JFMCs-	Joint Forest Management Committees
KCC-	Khangchendzonga Conservation Committee
MP-	Medicinal Plants
MAPs-	Medicinal and Aromatic Plants
MA&D-	Market Analysis and Development
MOA-	Ministry of Agriculture
MPP-	Mountain Products Project
MTI-	Ministry of Trade and Industry
NITM-	National Institute of Traditional Medicine
NGO-	Non Governmental Organisations
NMC-	National Mushroom Centre
NRM -	Natural Resources Management
NTFP-	Non timber Forest Products
PPA Nepal-	Public Private Partnership Nepal
PRA-	Participatory Rural Appraisal
REDP-	Rural Enterprise Development Programme
RGOB-	Royal Government of Bhutan
RMC -	Regional Member Country
RNRC-	Renewable Natural Resources Research Centre
SDC-	Swiss Development Cooperation
SIYB-	Start and Improve Your Business
SNV-	Netherlands Development Cooperation
TMI-	The Mountain Institute

TORs-	Terms of Reference
UNDP-	United Nations Development Programme
USAID-	United States Aid for International Development
WTO-	World Trade Organisation
WWF-	World Wildlife Fund

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I. Introduction

1.1 Need for Small Scale Mountain Enterprises

The promotion of rural enterprises is crucial for the achievement of broader development objectives, including poverty alleviation, economic development and the promotion of more democratic and pluralist societies in mountain regions. Transformation of mountain economies from subsistence to market orientation and diversification into activities based on the special advantages offered by mountain regions for producing high value and value added commodities is essential for improving the livelihoods of the rural poor in the mountain regions. The International Centre for Integrated Mountain Development (ICIMOD) studies have shown that niche-based mountain products and services, including horticultural products, medicinal herbs, non-timber forest products (NTFP's), livestock products, silk, fibres, crafts, beekeeping products and mountain tourism, can serve as a basis for diversifying the incomes of rural mountain communities in the Hindu Kush Himalayas.

The FAO Mountain Products Project (MPP), initiated under the sustainable livelihood theme of the Mountain Partnership, was launched in September 2003 with the overall objective of promoting and protecting local quality products as a strategy for sustainable development in mountain regions. The development goal is to alleviate poverty in mountain regions by promoting the development of micro and small-scale enterprises based on local high-quality, high value products. The immediate objective is to build institutional capacity at regional, national and local level through training programmes that address the specific needs of sub-sector actors (e.g. producers, processors, traders and retailers).

The objective of the present assignment for which an LOA was signed between FAO and ICIMOD/ARID was to provide inputs for designing a regional training programme to support small-scale mountain enterprises in the HKH region.

1.2 Link between MPP phase I and II

During phase I¹ of the MPP the following criteria was used for selecting and preparing an inventory of the mountain products from the HKH²:

- Products are produced and/or processed in a mountain area
- Products belonging to one of the following categories: Food and beverages, medicines and nutraceuticals, essential oils, colourants and dyes, and crafts and tourism.
- Products involving some degree of processing/transformation
- Products that generate income i.e. not subsistence products

Based on these criteria micro hydro for power generation (Nepal), woollen sweaters from sheep wool (Nepal), *Trichoderma matsutake* mushroom (Bhutan), cheese from yak milk (Nepal), seabuck thorn juice (Nepal), tongba - millet based indigenous liquor (Nepal), different items of hemp fibre (Nepal), mugwort (yomogi) in Japan, Ashwagandha churana – a medicinal product (Nepal), Fruit wine (Nepal), Himalayan cliff bee honey in (Nepal), Red rice (Nepal), Rohitakadi

¹ Phase I of MPP in the Hindu Kush Himalayas was carried out by the Asia Pacific Mountain Forum, ICIMOD

² Alexia Baldascini, Draft Final Report, Promoting and Protecting Local Products as a Means for Sustainable Development in Mountain regions, GCP/INT/886/FRA, September 2003-March 2004.

churana an ayurvedic preparation (Nepal), Naturally dyed textiles (India), essential oil from jatamansi species (Nepal), tea (Nepal), buckwheat (Nepal), apple (Nepal), hand woven woollen carpet (Nepal), Himalayan bamboo (Nepal), local pulse bean (Nepal), handmade paper (Nepal), Morels (Nepal), Pashmina (Nepal), hand embroidery as a craft (Pakistan), Himalayan homestays (India), cordyceps sinensis –high value medicinal plants in Bhutan, and shu or patti – hand crafted woollen fabric (Pakistan) were selected.

Most of the products selected during phase I was from Nepal and the product categories ranged from agriculture to natural resource to off farm based products. The inventory provided a list of important products that were produced by mountain communities. This was used to study the products further and develop a linkage with the priorities of the MPP phase II, ICIMOD and the national partners and stakeholders. It was observed that products linked to natural resources and on community-managed enterprises was the major area of interest in the region. These coupled with information generated during the first phase was used to shortlist a set of products for detailed focussed study based on supply chains assessments during phase II.

The inventory of products developed during phase I was also used to further expand the list of products in the other countries of the HKH. To maintain geographical focus phase II in the HKH did not target Japan and Pakistan (one product from Japan and two products from Pakistan were included in the inventory prepared during phase I) and instead attempted to study products in Nepal, India and Bhutan in the Eastern Himalayas.

Since India was selected parts of the central and western Himalayas were also included. This process ensured retention of important stakeholders from India during phase II and in maintaining a balance between the ranges of products in each of the three countries. Finally information and contacts developed during phase I also helped to initiate discussions, in setting meetings and generating information to implement phase II.

Hence phase II of the project in the HKH has gradually evolved from the larger documentation process to focussed study based on supply chains assessments. All product categories selected during phase I are represented in phase II.

1.3 Structure of the Report

The report has the following sections:

- Methodology
- Selection of key strategic sub sectors
- Preliminary Analysis of selected sub-sectors
- Conclusion

II. Methodology

In implementing phase II of the MPP, a strong product selection criterion was the first requirement. This is essentially because of the large number of mountain products available that can be differentiated from each other by agricultural, services, natural, and off farm characteristics; their different production methods; different resource sharing and management regimes; capital and skill requirement; equity and tenure rights; individual to household to community level

production and institutional support. Of all the mountain products many are still in subsistence production mode i.e. those, which are produced mainly for consumption within the household with very little surplus for trade, many are constrained by policy and legal frameworks for commercialisation, many with strong local cultural and geographical affiliations, limiting their use and practice to a small region. Hence products selected for phase II required to be such that they were natural resource based and have the potential to improve livelihoods of a large number of mountain people through their development.

A number of agencies from the Government, and non-governmental sectors are involved in the production, promotion, and conservation of mountain products. Harmonising the MPP concept with the ongoing projects and programmes supported by the Government and other agencies was an important requirement for its usefulness and sustainability. So a thorough understanding of the sector was a requirement to select products and partners for implementing phase II of MPP.

Another important requirement was geographical coverage for targeting and shortlisting products. Bhutan, India and Nepal were selected as they are in the Eastern Himalayas. Uttaranchal and Himachal Pradesh States of India although lying in the Central and Western Himalayas respectively, were selected as they have the same resource endowments (for example oak forests and indigenous honey bees species) as in the Eastern Himalayas. This has enabled a fairly good coverage of the mountain areas of India.

Phase I of the MPP, which had prepared an inventory of mountain products and services, based on a set of criteria needed to be shortlisted in order to focus on a set of products for phase II. To achieve this the activity started with selecting enterprises producing high value mountain products with established market linkages, which were linked to natural resources and conservation of biodiversity in three ICIMOD regional member countries (RMCs) Bhutan, India and Nepal. Emphasis was on selecting enterprises that were working under the decentralised natural resource management (NRM) programmes in the region for e.g. community forestry, joint forest management, van panchayats (peoples forest councils) and Community Based Natural Resources Management (CBNRM). In selecting the products and enterprises it was taken care that products and enterprises focussed on improving the livelihood base of communities, conserve biodiversity and not confined to individuals and single households.

Discussions were held with ICIMOD professionals, literature was reviewed and a broad set of products and services were identified. Field visits were carried out in Bhutan (Thimpu, Paro), India (Gangtok, Yuksom, Dehradun, Ukhimath, Srinagar and Kullu in Sikkim, Uttaranchal and Himachal Pradesh states) and Nepal (Kathmandu) to find out the different initiatives and priorities of stakeholders involved in rural enterprise development for final product selection. A set of institutions comprising the Government agencies, NGOs, and private sector in the three countries was short listed for targeted visits and discussions.

Meetings were held with stakeholders i.e. project managers and staff of Ministry of Agriculture – Department of Agriculture Marketing Services, Department of Forests, Renewable Natural Resources Research Centre, Ministry of Trade and Industry, Essential Oil Development Programme, Rural Enterprise Development Programme in Bhutan, Ecotourism and Conservation Society of Sikkim, Help Tourism, Appropriate Technology India, Winrock India, and Jagruti in India, Asia Network for Sustainable Agriculture and Bioresources, Business Development

Services - Medicinal and Aromatic Plants, Male International, Gorkha Ayurved, Centre for Agriculture Technology in Nepal, and producers, processors, and exporters for the products wherever available. Meetings with different development agencies and donors were also held to obtain their perspectives and suggestions for the potential of different products and services of Nepal at Kathmandu.

The problems in the supply chain of the products in the three countries were identified in collaboration with the stakeholders and means to address them were also discussed. It was decided to select two sub sectors per country given the large number of sub sectors that were identified during the course of field visits. A set of criteria was developed by ICIMOD based on the TORs to select sub-sectors in the three countries. This was followed by developing a second set of criteria based on the priorities of the ARID programme of ICIMOD to shortlist sub sectors for final evaluation. The shortlisted sub sectors were then ranked according to the second set of criteria and a weighted score was developed to finalise two sub sectors per country. (Details of the entire exercise are provided in section 3 of this report).

In conclusion, the project has taken the supply chain approach in understanding the constraints in the products and enterprises during phase II of the project. It used the sub sector approach to select the final list of products as laid out in the Action for Enterprises (AFE) document, provided by FAO. The concept of commercially viable solutions for enterprise development is still in its infancy in the region. Supporting institutions do provide services but the scale of operation and profits generated are not sufficient for commercial services till date.

III. Selection of Key Strategic Sub Sectors

3.1 Criteria for Sub sector Selection

A set of criteria was developed to select sub sectors in the three countries. This was necessary to cut down the number of products that emerged after discussions with the stakeholders, donors, and development professional in the region. The use of these criteria has led to the selection of a range of products listed under section 3.2. The criteria and the their description are provided in the following table:

Criteria	Description
<ul style="list-style-type: none"> The product already exists and is well known (at the local, national or international level) for its quality 	<ul style="list-style-type: none"> High value products of mountain regions Already in use by different stakeholders
<ul style="list-style-type: none"> The unique quality of the product is linked to the natural resources and traditional production methods of the mountain region where it is produced; 	<ul style="list-style-type: none"> Produced in common property resource areas Linked to decentralised natural resource management Traditional knowledge associated with the products
<ul style="list-style-type: none"> The product has potential for market expansion (from local to national or international level) 	<ul style="list-style-type: none"> Large demand from industries
<ul style="list-style-type: none"> The enterprise contributes to 	<ul style="list-style-type: none"> Enterprise focussed on conserving

conservation of biodiversity	natural resources by providing economic incentives to producer groups
<ul style="list-style-type: none"> The producers have organized themselves into structured groups, associations or producer cooperatives 	<ul style="list-style-type: none"> Existence of community managed enterprises
<ul style="list-style-type: none"> The producers show entrepreneurial spirit and motivation 	<ul style="list-style-type: none"> Producers have participated in trade fairs
<ul style="list-style-type: none"> There exists an enabling institutional context 	<ul style="list-style-type: none"> Existence of supporting institutions, such as local government, NGOs, research institutions, credit organizations
<ul style="list-style-type: none"> The producers have already established some linkages with these supporting institutions 	<ul style="list-style-type: none"> Backward and forward linkages of supporting institutions with the community enterprises.
<ul style="list-style-type: none"> Geographical Niche 	<ul style="list-style-type: none"> Unique products to the HKH Large geographical spread
<ul style="list-style-type: none"> Knowledge of Products 	<ul style="list-style-type: none"> Traditional usage of resources Subsistence use for generations
<ul style="list-style-type: none"> Market Demand and Growth Potential 	<ul style="list-style-type: none"> Global market estimated at UD\$ 60 billion Increasing industrial demand
<ul style="list-style-type: none"> National Priorities 	<ul style="list-style-type: none"> Priority area of the national Governments Focus of development in mountain regions of the HKH
<ul style="list-style-type: none"> Value Added Potential 	<ul style="list-style-type: none"> Potential to add value for local income retention
<ul style="list-style-type: none"> Institutional Mandate 	<ul style="list-style-type: none"> ARID committed to developing mountain regions through niche products and services
<ul style="list-style-type: none"> Conservation Potential 	<ul style="list-style-type: none"> Conservation of resources through incentives to communities.
<ul style="list-style-type: none"> Linkages 	<ul style="list-style-type: none"> Opportunities to link to the supply chains of large corporations.

3.2 Short listing of Sub Sectors

Products fulfilling the sub sector selection criteria's

Some of the products that conform to one or more of the above sub sector selection criteria in Bhutan, India and Nepal consist of the following:

Essential oils from *Nardostachys grandiflora* and Lemon grass, paper from *Daphne* species, medicinal plants based products, spices, honey and bee products from *Apis cerana*, wild mushrooms *Trichoderma matsutake* and *Shitake* species, organic vegetables, Naturally dyed textiles, Morels, Himalayan homestays, Pashmina, Himalayan cliff bee honey, Himalayan bamboo, tasar silk, *cordyceps sinensis*, allo cloth, hand woven woollen carpets and fruit wine.

Based on ICIMODs goal of enhancing economic security and ensuring environmental conservation in mountain regions the following final product selection criteria were developed:

- **Conservation Potential:** This is guided by the fact that if resources are not conserved then the opportunity to harness niche resources for long-term livelihood security is lost.
- **Market Demand and Growth Potential:** This criteria lays emphasis on the fact that demand driven approaches have higher chances of success than supply driven ones.
- **Value Added Potential:** This criterion explores potential to add value to the products at the community level to retain maximum share of the value of the products at the grassroots.
- **National Priorities:** Government support is essential for up scaling successful initiatives and for policy support.

3.3 Final Shortlisting of Sub sectors

Scoring and Ranking the shortlist of Sub Sectors

Based on the AFE methodology provided by FAO, each of the final selection criteria was assigned scores between 1-5 (1 for the lowest and 5 for the highest). Conservation potential was taken to be of the highest priority and was assigned a weight of 3; market demand and growth potential was of second highest priority and was assigned a weight of 2. The remaining two criteria's were assigned weights of 1 each. The products were assigned scores in relation to the criteria's, which were multiplied by the assigned weights to calculate the final scores. This is explained in table 1.

Table 1: Ranking of Products with selection criteria's

Products	Criteria's				Total Points
	Conservation potential (weighted 3x)	Market Demand and growth Potential (weighted 2x)	Value Added Potential (weighted 1x)	National Priorities (weighted 1x)	
Nardostachys grandiflora oil	3	4	4	2	23
Lemon grass oil	1	3	3	4	16
Paper from Daphne species	5	4	5	4	32
Medicinal plants based products	4	5	5	5	32
Spices	1	3	2	2	13
Honey and bee products	4	4	5	5	29
Yak cheese	1	2	3	1	18
Wild mushrooms Trichoderma matsutake and Shitake species	4	5	4	5	31
Organic	3	3	2	4	21

vegetables					
Naturally dyed textiles	1	3	2	1	12
Morels	1	4	1	2	14
Himalayan homestays	2	2	3	2	13
Tasar silk	4	4	5	5	32
<i>Cordyceps sinensis</i>	4	5	5	5	32
Allo cloth	1	1	2	1	8
Hand woven woollen carpets	1	3	2	1	12
Fruit wine	1	1	2	1	8

Based on the scoring results handmade paper from *Daphne* species, medicinal plants based products; tasar silk and *cordyceps sinensis* had the highest scores with 32 points. Wild mushrooms *Trichoderma matsutake* and Shitake species had the second highest score with 31 points and honey and bee products from *Apis cerana* were third with 29 points. Since the product categories were spread across three countries under study, and with the project requirement of two products per country all the above products have been selected. These products were also selected on the assumption that financial and human resources would be available to carry out detailed studies.

IV. Preliminary Analysis of Selected Sub Sectors

4.1 Introduction on the natural products sector in the Hindu Kush Himalayas

The various actors in the natural product sub sector comprises of producers, traders, wholesalers, processors, manufacturers and exporters. However, trade in natural products in the HKH region is highly disorganized and unfairly run. The regulations governing the trade and enterprise are based on restrictive policies and age-old practices of command and control. Except for a few isolated cases, lack of clearly defined resource tenure rights and benefit sharing mechanism is leading to over-harvesting and mismanagement of these resources. Archaic rules and ad-hoc practices of imposing collection permits, blanket bans, and lack of knowledge of nature of rules and regulations are contributing to increased rent seeking policies on the part of the government functionaries that have aggravated illegal harvesting leading to 'the tragedy of commons' type syndromes in the natural product resources.

Royalty payment, sales, custom and excise taxes, and transport permits are illogically imposed and unfairly enforced. The problems also arise due to discrepancies in interpretations and distortions in use of existing regulatory provisions. There are other non-obvious, un-predictable and unfair hassles in the hands of regulatory agencies, administrative sanctions and simple extortions imposed to the collectors, producers, local traders and users involved in marketing and transportation of natural products adding to the cost of the products. Product identification and authentication are major challenges as there are many inferior substitutes and spurious materials in the market and these products are often traded under fake names. There is neither a feasible system to trace the origin of raw and processed products nor standards to match to the international quality control parameters and therefore, the quality of the products cannot be ascertained at sellers' end.

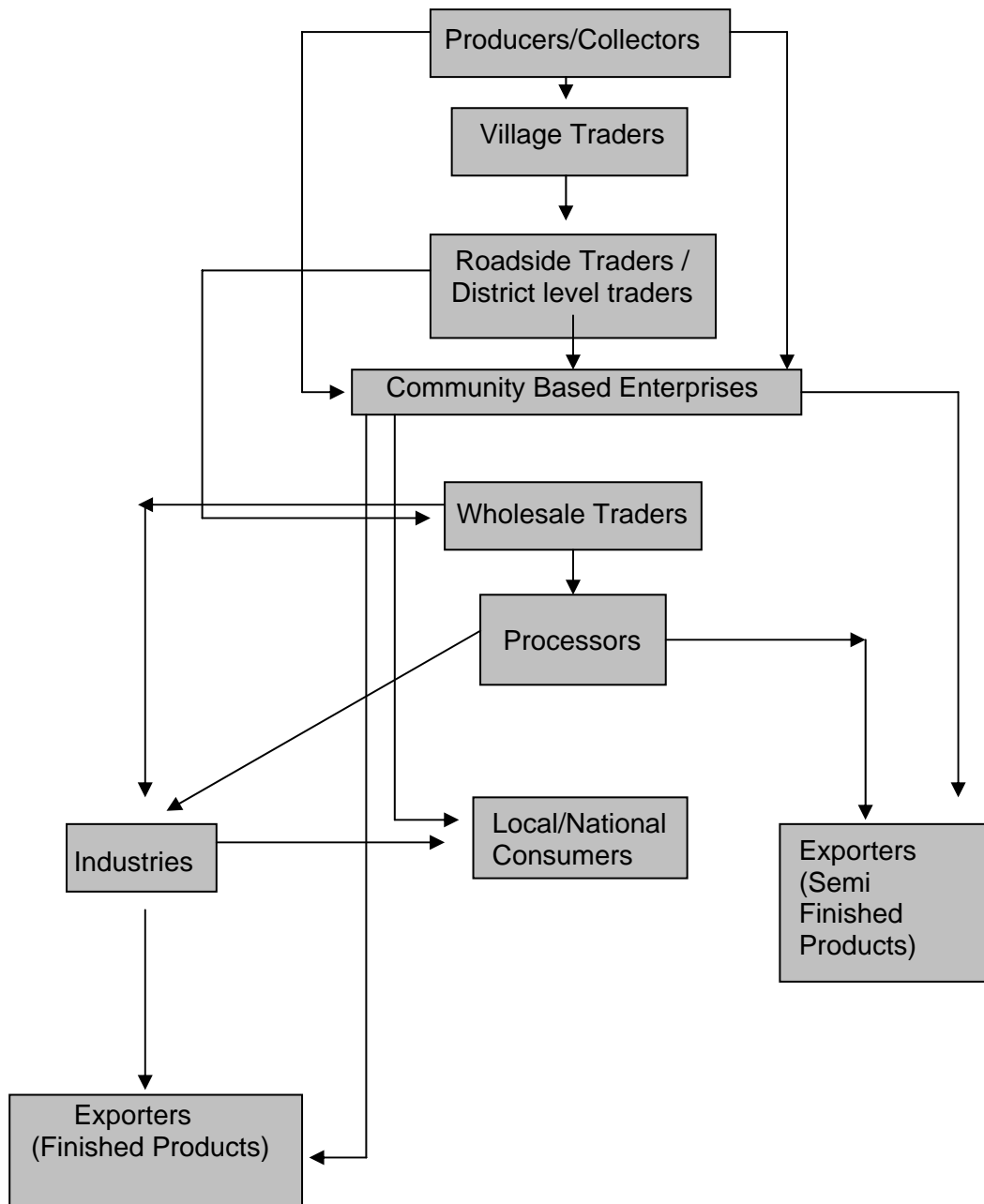
Unfortunately, while demand rises, inequitable trade practices have meant that only a small margin of the profits from high value natural products trickle down to the collectors and harvesters. This is mainly because of the secretive and unorganized marketing systems, low levels of capacities and technologies with which they work, lack of knowledge and flow of market information in remote highland regions, where many of these high-value, low-volume natural products are produced. While increasing market demand-led extraction of highland natural products is threatening many species with extinction, producers are being exploited by traders and middlemen who dominate the secretive and unorganised MAP trade and enterprise sectors. Also, as most high-value upland products are exported in the unprocessed form and with inconsistent qualities, communities do not gain through value addition and receive only a meagre share of the value of the final products. Highly developed illegal trading networks in almost all the countries in the Himalayas control and operate the bulk of raw MAP trade, through lax border controls. Despite this, no regional collaboration in implementing international covenants relating to biodiversity exists to stem this growing illegal market.

To counter some of the above mentioned problems development agencies in the three countries have attempted to develop systems that perform a major chunk of the activities in the value chain for example, part processing, semi- product development, development of business service providers, establishment of local institutions which carry out functions of the market intermediaries and as resource managers. In the case of Bhutan the Government is taking stringent steps to ensure the development of systems and processes that provide maximum benefits to the producer communities.

Therefore from the above it is evident that the relationship among the actors in the natural product sub sectors is highly conflicting, exploitative, unethical and unreasonable.

The trade channel between different actors in the value chain of natural products is shown in figure 1.

Figure I: Marketing channels for natural products in the HKH region – Relationships between Sub-sector Actors



4.2 Identification of actors in selected sub sectors

4.2.1 Bhutan: *Cordyceps sinensis*

Cordyceps sinensis (Yarsa Guinbo) is a high value medicinal plant found in the alpine regions of Northern Bhutan. Its high value is mainly because of its unique medicinal properties as tonic/aphrodisiac. In May 2004 the RGOB had de-listed the species from Schedule 1, of the Nature Conservation Act, of the banned species list as studies conducted by the Renewable Natural Resources Research Centre (RNRC) of the Government of Bhutan had indicated that sustainable collection rather than illegal and haphazard collection would be the best way of conserving the resource.

Cordyceps is harvested in the month of June from Northern Bhutan (alpine 4000mts) has a large market in Asia, Europe and The United States. As the species was de listed in May 2004 and harvesting started in June the ministries in the RGOB were unprepared to handle marketing of the harvested produce. A committee was formed with Agriculture Marketing Services (AMS) as the lead agency to market cordyceps and a basic minimum price of Nu 37,500 (USD 830) was set per Kg. However due to competition between buyers the rates finally touched Nu 87,000/kg (USD 1,930) in 2004. Communities and the ministries set certain laws and regulations for harvesting, selling, and monitoring the process and collectors in Northern Bhutan earned handsomely from cordyceps in 2004 from an estimated sale of 300 – 400 kgs.

The high price of the product, its high market demand, the lack of research evidence on sustainable management, lack of skills for scientific management, absence of an institutional mechanism, absence of a national strategy for managing the activity, complaints from the buyers, the diversity of stakeholders involved, the risks associated with over harvesting and the lack of a monitoring system have put up many questions to the Government on managing this new community based income generating opportunity on a sustainable basis.

In the first year of its operation, several constraints were felt. These include:

- Sustainability of the product and the environment – what is the level of sustainable harvesting
- Harvesting norms and regulations – how and when to harvest
- Marketing strategy – how to market - community based, through the private sector, marketing institutions.
- Post Harvest Technology – how to dry, how to store, packaging
- Bhutan Cordyceps Image – how to develop and maintain an image of Bhutanese cordyceps in the international markets (Market Positioning)
- Monitoring – for environmental and the enterprise sustainability
- Sustainable management of the entire enterprise and institutional arrangements

Actors in the product *Cordyceps* value Chain:

Producers/Collectors: The collectors are from remote regions of north Bhutan who are normally herd yaks in high altitudes. They are one of the poorest communities of Bhutan often living at less than 1 USD a day. Till April 2004

the product was banned for collection by the Royal Government of Bhutan (RGOB) for protecting and conserving the resource without any scientific justification. However, despite of the ban the product was still collected by Tibetans who came from across the northern border and took away the products. Hence there were no benefits to the local communities and the resources were indiscriminately collected. De listing of the species, have opened up a huge window of economic opportunity for local communities. They have formed collector groups to collect cordyceps from the wild. Local rules have been laid down by the collectors together with the Department of Forests and Agricultural Marketing Services (AMS), which allow only one member of the household to collect cordyceps. These rules also prohibit communities from adjoining areas to collect cordyceps from adjoining areas. However collectors are not aware of its sustainable collection, drying, storing and transport.

Processors: There are currently no processors for the product in Bhutan and it is sold raw. The National Institute of Traditional Medicine (NITM) uses cordyceps as an ingredient for different medicines.

Middlemen: The middlemen in terms of ownership of the products consist of the Bhutanese exporters. They buy the products directly from the collectors at auctions organised by the AMS.

Exporters: Since 2004, there are two exporters of Cordyceps in Bhutan. They exported cordyceps for the first time but incurred faced losses due to lack of information and technologies for improving product quality. As the products were bought in the wet form with moisture levels above 50% they suffered losses up to 20% of the total weight purchased. This is alarming as cordyceps is exported in the dried form and was purchased at a rate of USD 1,930 in 2004. It is estimated that up to 300-400 kgs of cordyceps were purchased by exporters in 2004.

Exporters have faced problems in the markets due to wrong drying techniques applied by the collectors, which made the product appear darker and inconsistent with the ones that came from neighbouring areas of Tibet, Nepal and India. This has caused a lot of worry for the Bhutanese Government on the long-term market positioning of the product.

Consumers: Most of the Bhutanese cordyceps were sold to importers of natural products in Singapore. The final consumers of the finished product are not known to the exporters. It is said that 50% of the products go back to China for finished product development and the rest to the United States of America for the same purpose. Information on these issues are difficult to obtain as these products are mixed with the ones from other production areas and do not have specific sources of raw materials. The market survey carried out by the AMS revealed this. At the national level NITM is a consumer.

Supporting Institutions: After the de listing of the species the AMS was given the responsibility of marketing Bhutanese cordyceps. The Department of Forests, Nature Conservation, and Renewable Natural Resources Research Centre (RNRC) are the other agencies that are working on its sustainable utilisation in Bhutan.

4.2.2 Bhutan *Trichoderma matsutake* and *Shitake* species

Since time untold mushrooms have been integral part of the Bhutanese cuisine. Vast varieties of mushrooms are found in the forest, out of which a few are edible. Mushroom cultivation is easy; demands limited area, helps to generate income, and improves the nutritional status of the people at the same time. Hence, as of now, farmers in 18 out of 20 districts have taken up mushroom cultivation in Bhutan. Among them matsutake and shitake mushrooms are of high value because of their unique taste.

Matsutake (*Trichoderma matsutake*) mushroom has found a market in Japan and is priced very high. Proper and scientific ways of harvesting mushrooms have been developed for sustainable use. A stipulated period has been set for Matsutake for its collection and there is minimum fixed size (7-5cms) below which it cannot be collected. Non-observance of this criterion invites fine. This is to provide enough time for the sporulation of the mushrooms to take place, thereby ensuring regeneration and sustainability in turn. To avoid losses through damages, proper handling is also being discussed. The National Mushroom Centre (NMC) is also studying other wild mushrooms like Chanterelle (Sisi shamu) to set up specific harvesting period and collection standards for them. Training on sustainable harvesting techniques and post harvest care are imparted to community members from time to time.

Recently NMC has started a programme on Shitake mushrooms. Shitake has an advantage over matsutake as it is sold dry while Matsutake has to be consumed within 48 hours. But the NMC does not have sufficient capacity to manage the Shitake mushrooms and are trying their own innovations. As shitake is best grown on logs of oak, oak forest management for sustainable supply of logs and developing oak plantations are also important activities. Management of oak forests and production of shitake mushrooms is a blend of conservation and economic development. Other issues such as use of renewable energy in drying, micro credit and group savings are also important areas in promoting shitake mushrooms.

Actors in the wild mushroom Value Chain:

Collectors/Producers: Matsutake mushrooms are being produced in Genekha block of Thimpu accounting for 90% of the production. The collectors are mainly local communities of Genekha. With a forest gate price of Nu.450/Kg (USD10), the total cash flow in the block amounted to some Nu.6,17,220 (US \$ 13,716) in 2002 from an estimated sale of 1,524 kgs. Comparing this to the peak production in 1998 at 11,470Kgs and forest gate price of Nu.800/Kg (USD18), the total cash flow was over Nu.8,258,400 (US \$ 1,83,520). The per capita household income from the sale of matsutake for 110 households of Genekha on an average ranged from Nu.5, 661 (USD 130) to Nu.75, 076 (USD 1745). The earning was invested for construction and repair of houses, purchasing bulls and improved breed of cattle, and agricultural labour saving machines like power-tillers, as informed by the NMC.

Exporters: Matsutake mushrooms are exported by two local export agencies in Bhutan. The products after packaging are directly exported to Japan with a preferential arrangement with Druk Air (the national carrier). The Government has facilitated exports by organising marketing missions to Japan and providing market information to the collectors and exporters. From 1998

onwards, export has fallen, and in 2002 it was only 1,523Kgs. This was mainly because of competition from Chinese matsutake.

Consumers: Japan is the major market for Bhutanese matsutake. Some of the products also reach Singapore and India and are purchased by hotels. Exporters have developed linkages with supermarkets in Tokyo and products are mainly consumed there. It is a highly perishable product and needs to be consumed within 48 hours of harvest.

Supporting Institutions: The production and marketing of matsutake mushrooms is supported by the national mushroom centre (NMC) in Bhutan. At present NMC has limited number of technical staff, which makes it difficult to meet the demands of training and technical backup and at the same time to carry out research studies. There is a need to up-grade both the number and qualification of the staff. They need to be exposed to mushroom cultivation outside the country (Nepal for Shitake), as most of them have not seen any mushroom cultivation outside Bhutan. There is a need for further training, as production of shitake mushrooms requires high levels of technical competency. With the introduction of CBNRM in matsutake production areas they are facing another kind of situation where just scientific/technical knowledge is not enough while conducting training or also while implementing the programmes.

Training for trainers on technical aspects of shitake mushroom production and study tours both within the country and in the region is felt very necessary in order for the staff to be able to implement the programs effectively.

4.2.3 India: Tasar Silk in The Garhwal Himalayas

Appropriate Technology India (ATI) was established in the year 1994 under the BCN project. It started with two products tasar silk and honey which are two of the most successful products of ATI. It is the largest producer of Tasar silk (reared in the temperate oak forests of the Gharwal Himalayas in the newly created state of Uttaranchal) in the world. Branded sales of silk is being carried out through Chamoli Tasar Private Ltd (CTPL), a village community enterprise supported by ATI. Silk cocoons produced are hand spun or reeled into fine silk yarn by village women. Traditional weavers of the region also blend the silk with high quality natural wool fibre. Finished silk products are sold under the brand name of Devbhumi Oak Forest Silk.

ATI's focus area is conservation based enterprise development, which is implemented in 5 districts of Uttaranchal State – Rudraprayag, Chamoli, Tehri, Pauri and Uttarkashi. From its main office in Ukhimath and Rudraprayag, ATI's outreach extends to 10 valleys, over 282 villages and over 3000 beneficiaries. ATI builds partnerships with the public, private and cooperative sectors –and with NGOS and farmers groups to achieve its goals.

Although ATI operates one of the most successful conservation related enterprise programmes in the country it still faces problems with supervisory, management and organisational skills, community mobilisation skills, and dissemination of research and technological information to communities.

Actors in the Tasar Silk Value Chain:

Producers: The producers are communities working under the van panchayats (village forest councils) of Rudraprayag, Chamoli, Tehri, Pauri and Uttarkashi in Uttaranchal state. Producers find employment and income through grainage (eggs) production, altitude cocoon rearing using oak leaves, spinning/reeling yarn, weaving and marketing. Services are provided in terms of technical assistance for rearing, training on spinning/reeling, loans for equipment, procurement of goods produced and marketing. In 2004, around 750 men and women, who are members of CTPL, had earned upto \$400 each per annum from cocoon rearing, spinning and reeling silk yarn and weaving.

All the functions in the value chain from plantations to sale of finished products are carried by Chamoli Tasar Private Ltd. These functions include:

- Plantation (raw material production)
- Grainage (seed production)
- Rearing (cocoon production)
- Reeling and Spinning (yarn production)
- Dyeing of yarn
- Weaving (fabric production)
- Finishing (finishing of ready products, calendaring, packaging, labeling)
- Marketing

Consumers: The consumers of tasar silk products are the elite and environmentally friendly people of India. The upper end market is not very price sensitive. Finished products like stylish shawls and stoles sell for a high price, which are preferred by the upper class customers. Some of the products are also sold at the national exhibitions. At the local level AT India has leased 18 retail shops/kiosks from the Garhwal and Kumaon tourist hotel companies for pilgrims and tourists to buy while travelling.

Supporting Institution: Appropriate Technology India (ATI) is a professionally managed NGO, based in Ukhimath, Uttaranchal State, India. ATI works with the goal of assisting village communities of the Western Himalayan Eco region to improve livelihoods and conserve natural resources while utilizing non-timber forest products in an equitable, economically and environmentally sustainable manner. ATI believes that if local people are given alternative opportunities for income generation through non-timber forest products, and have access to information and technical support, they have incentives to work towards long-term conservation of biological diversity and agricultural resources. The ATI strategy is designed to achieve community participation by ensuring that the community perceives direct benefit from the conservation effort.

4.2.4 India: Honey in the Western Himalayas

Forest honey is a widely available product with most mountain households engaged in traditional honey collection and rearing. Forest honey is well known for its quality in terms of purity and medicinal benefits. It is much sought after at locally and in national markets. Forest honey is a non timber forest produce (NTFP) and is harnessed traditionally in the Lag valley (Himachal Pradesh, India) through wooden logs of different sizes placed among cliffs and locally harvested.

Due to inadequate knowledge of the marketing chain and lack of capacity to deal with more formal and organized channels of commerce, the trade in honey tends to be low key, localized and unremunerative. Thus, despite its quality, organic origin and high market demand, the honey collectors get a raw deal. Honey, with minimal value addition like proper bottling and labeling, is sold for huge profit by organized companies. Community based enterprises and value addition through appropriate collection, production, cleaning, handling and packaging practices can easily enhance quality and consumer acceptance of forest honey, and address the challenge of consolidating regular and steady supplies and of profitable market linkages. Value addition to bees wax can supplement returns from honey-based enterprises.

Any improvement in beekeeping will link directly to conservation of flowering shrubs and trees locally through pollination services. For instance, indigenous flowering species in the mid Himalaya like wild apricot, bird cherry, chestnuts, hazelnuts and a host of perennial shrubs/ climbers will thrive due to increased pollination services.

Communities of the Lag valley need to be trained in beekeeping, honey and bee product development, standardisation and quality control, marketing, and business and enterprise management. They need to understand the process involved in the movement of produce through each stage in the value chain and also the various rules, regulations and procedures involved in the same.

Actors in the Forest Honey Value Chain:

Producers/Collectors: Producers and collectors consist of the economically and socially backward disadvantage women. Landholding of the collector household is less than 5 bighas (1 acre) and food production is able to meet two to three month's requirement of the family. Annual income is less than Rs 26,460 (slightly more than USD1/ day). There are 105 log hives, 21 box hives and 138 wall hives with the women groups in Lag valley. The producers are acutely dependent on forest and also sell fuelwood, hay, and medicinal plants for meeting their day-to-day needs.

Processors: There are no honey processors or processing facility available in the region. Mostly processing is done by large corporations who buy raw honey for branded sales to national and international markets.

Middlemen and Traders: The existing honey trade is unorganized and opportunistic. Each individual sells at his/her level with minimal processing and packaging to village traders and accept whatever price is offered. Many people sell honey to a trader or shopkeeper against redeeming a debt. Also because of lack of organization, the total quantities produced or sold can only be approximated and this gap in information becomes an obstacle in business development. Further, since the honey is sold as raw material rather than an end product, the supply chain is limited to the first trader who buys the honey. Subsequent part of the supply chain and stages of value addition are unclear/ not known.

Consumers: Consumers of honey do not differentiate on the source of honey and large producers purchase honey through agents from different sources and sell them as their product without any form of geographical or product

attribute. Hence the specific consumers of the honey produced in Lag valley is difficult to say. However, local people of Kullu (the district capital town) also sometimes buy honey from the producers but they are a very small group.

Supporting Institution: Jagriti, a community based organization (CBO) has been actively involved, over the past three years, with a project on “Empowerment of Poor, Rural Women” in the Lag valley, in Kullu, Himachal Pradesh, India. Jagriti is registered as a Society under the Indian Societies’ Registration Act, 1860. Jagriti operates in the 12 panchayats (peoples council) of the Lag valley. It has formed over 64 Women’s Saving and Credit Groups (WSCGs) largely of poor women identified through a house-to-house survey and based on locally developed poverty assessment indicators. There are presently over 850 women members representing as many households. This roughly accounts for 25% of the total households in the valley. The CBO is thus able to reach out to over 850 households and the WSCGs are the principal instruments for any project interventions.

4.2.5 Nepal - Handmade paper from Lokta (Daphne species)

Handmade paper of Nepal is a very old and established industry mainly being dominated by the big private business till the recent past. Over the last couple of years several community enterprises have been established by development projects for improving livelihood opportunities of the rural people. While some of the enterprises are doing well and have an established market, others are facing many problems. As the Nepal handmade paper has created a name for itself in the global market, initiatives to enhance the product quality and performance of such community owned enterprises would assist in long-term livelihood security of remote mountain communities.

The sub sector was primarily selected because of the problems related to sustainable resource management, use of large quantities of firewood, loss of raw material while processing, quality of the products and their inconsistency, new product development and developing innovative marketing strategies.

Actors in the Handmade paper Value Chain

Producers/Harvesters: Harvestors are part of The Kailash Forest User Group (KFUG), known as ‘Sri Binayak Pimi Danda Community Forest User Group’, which was formed in the year 1999, and manages more than 900 ha of forest area in Kailash Village Development Committee (VDC) of Bajhang district, Nepal. The raw material, lokta bark, is stripped, dried and bundled in the forest, and then transported to the lower elevation paper enterprise.

The KFUG formed a company called Malika Handmade Paper Pvt Ltd (MHPPL), supported by Asia Network for sustainable Agriculture and Bioresources (ANSAB) in the year 1999, to produce hand made paper using Lokta, a shrub whose barks produce fibre for paper making. FUG members conserve Lokta in their natural habitats and harvest sustainably for resource conservation as well as conduct research on regeneration methods for in-situ and ex-situ conservation.

Processors: MHPPL processes the Daphne bark in to paper in Kailash VDC and entire operations are managed by men and women from the village. MHPPL announces its requirements to the FUG’s at least a week in advance and communities collect and convert Lokta to usable forms and then supply it

to the factory, which pays them the value @ NRs 21.00/Kg (USD 0.3) and the FUG charges NRs 3.00/kg (USD 0.042) as royalty. The unit operates at 3 batches/day and runs for 7 months a year producing 225-300 kouries/year (1 kouri = 200 pieces of paper). Production stops during the rainy season (July-September) and winters (January –February). 25 kg of raw material are used per batch, which produces 175 pieces of paper (approximately) of the size of 30 x 20 inches.

There are 12 permanent employees including a technician in MHPPL. Proper records are maintained and periodic meetings are organised to review progress, develop strategies and obtain feedback. It has three management committees' viz., micro-enterprise management committee, executive committee and an audit committee all comprised of members from local communities. The factory manager is overall in charge of production, factory management, inventorying and dispatching of the produce. The annual turnover of the factory is NRs 2,94,000 (USD 4200) and profits during the year 2003 were NRs 1,05,000 (USD 1500) approximately.

Traders and Middlemen: There are no middlemen and producers for paper products of this enterprise. Himalayan BioTrade Private Limited (HBTL) is the buyer of paper produced by MHPPL. They develop different products like greeting cards, lampshades, visiting cards, photo albums etc for sales to overseas and national markets from handmade paper.

Consumers: Buyers of HBTL include the Nepalese government agencies, multilateral and bilateral agencies, NGOs, and private companies in Nepal and Europe.

Supporting Institutions: The paper enterprise is supported by ANSAB. Established in 1992, ANSAB (Asia Network for Sustainable Agriculture and Bioresources) is an independent, non-profit, non-political, international non-governmental organisation with its headquarters in Kathmandu, Nepal. ANSAB has focal position in the field of enterprise based natural resource management through its work for more than a decade in biological, technological, economic and socio-cultural fronts associated to people centered conservation, management and use of biodiversity, especially natural resource management.

4.2.6 Nepal - Medicinal Plants based products

The medicinal and aromatic plants sector in Nepal is one of the most targeted development areas for the country. This is mainly because of the large number medicinal plants found in the country and their potential to uplift the socio-economic conditions of the poor mountain communities. Medicinal plants are of high value because of the growing alternative health care markets and the demand for green health products. However the interventions have mostly been on the supply side, and agencies have been struggling to develop appropriate markets, processing and value addition technologies apart from a few isolated cases.

Gorkha Ayurved Company (P) Ltd (GAC), a leading Nepalese herbal company aims to help community-based enterprises to market their medicinal plants (MP) products originating from sustainably managed sources. The company deals with Ayurveda (traditional health system) health products, natural nutritional supplements, herbal teas and essential oils.

The major problems with GAC is that the community based organisations supplying MPs and their staff are not conversant with the requirements of Good Manufacturing Practices (GMP), and Good Agricultural and Field Collection Practices (GAFCP). Another major problem in the supply chain of medicinal plants products is the well-networked illegal systems of marketing and trade. This sub sector includes an array of products ranging from essential oils, creams, pastes, powders, lotions etc.

Actors in the Value chains of medicinal plants based products

Producers/Collectors: The producers/collectors are communities living in remote regions of Nepal. Most of them are landless and collect medicinal plants as a source of supplementary income. They also do other kinds of petty jobs like daily wage labourers to meet their food, shelter and nutritional needs. In most of the cases collectors are unorganised and they sell their products to the village traders based on their requirements. The practice is exploitative. The difference between prices paid to collectors and the final produce is more than 200%. GAC purchases its products from FUGs that manage the MP resources sustainably from different parts of Nepal. Currently FUGs are unable to meet the demand for raw materials of GAC.

Processors: The processing of MPs is done by GAC, at their plant in Thankot outside Kathmandu. The market of products of GAC is quite good in terms of repeat orders from buyers but to operate within the WTO regime from 2007 it faces a great challenge to comply to its needs and requirements. GAC lacks exposure to good agriculture practices, good manufacturing practices and for testing the quality of the products, which are required under WTO. This has constrained GAC in selling syrups range of products to European markets, as these markets demand GMP. It mainly exports raw plant parts, tablets and powders as health supplements to Europe.

Traders and Middlemen: Traders and middlemen purchase products from local collectors and sell them to different types of buyers. In the case of GAC, it is not being able to source the entire requirement of raw materials from the FUGs of Nepal, because of the unorganised nature of the market. Hence it relies on wholesale traders and middlemen to purchase raw products to meet its raw material requirements. The traders and middlemen however do not supply quality products as they adulterate them with substitutes, and do not store them as per pharmacological standards. Hence in order to comply with the WTO norms and WHO guidelines they need to be made aware about appropriate sourcing, storing and transport. This is important, as traceability of the source of raw materials is an essential requirement to assess niche global markets.

Consumers: GAC products are consumed both within Nepal and in Europe. The products are retailed at stores in Kathmandu and there are distributors in Europe who order products every year. As distributors make the final sale of the products GAC is unable to develop linkages with the end consumers. It is mostly the elite and health conscious consumers who are attracted by GAC products.

Institutional support: Gorkha Ayurved Company (P) Ltd (GAC) established in 1984 is a joint venture between Nepalese entrepreneurs and a French NGO Centre for International Development and Research (CIDR). The company specialises in ayurvedic medicines, herbal tea and herbal products. Initially a processing plant was established at Haramtari, Gorkha district, Nepal and the

growing market demand has led to the establishment of another plant at Thankot in Nepal. The major objectives of GAC is to help poor people by involving them in MP activities, to organise training and education programmes, to develop production and distribution of cheap and efficient ayurvedic medicines, and to make an effort to introduce unique-Himalayan herbs in the international market.

4.3 Identification of constraints of selected sub sectors

Constraints in the natural products sector are many and can be grouped into categories related to markets, technology/product development, post harvest technologies, quality standards, sustainable resource management, business management, productivity enhancement, policies, credit, information, skills and capacities. Table II summarizes the main types of constraints with examples encountered in all selected sub sectors.

Table II: Sub sector Constraints

Category	Examples
Markets	<ul style="list-style-type: none"> • Lack of linkages with large buyers • Distorted and unorganised markets • Lack of marketing services
Technology/Product Development	<ul style="list-style-type: none"> • Traditional technologies inconsistent with market requirements • Poor access to modern technologies
Post Harvest Technology	<ul style="list-style-type: none"> • Lack of appropriate technologies • Lack of standards, and grades
Quality Standards	<ul style="list-style-type: none"> • Lack of national or regional standards • Existing standards do not meet international norms
Sustainable Resource Management	<ul style="list-style-type: none"> • Overexploitation of resources. • Lack of appropriate management plans. • Lack of tenure and property rights arrangements.
Business Management	<ul style="list-style-type: none"> • Lack of a business approach to enterprise development • Lack of business development services
Productivity Enhancement	<ul style="list-style-type: none"> • Loss during processing • Improper management of resources
Policy	<ul style="list-style-type: none"> • Restrictive policies • Absence of policies favouring small business
Credit	<ul style="list-style-type: none"> • Lack of credit facilities • High cost to micro-finance institutions.
Information	<ul style="list-style-type: none"> • Lack of market information • Lack of awareness on product quality • Lack of awareness on sanitary and phyto-sanitary measures
Skills and Capacities	<ul style="list-style-type: none"> • Lack of skills and capacities to improve product quality • Unable to meet global standards (GMP) • On all the categories listed.

4.4 Measures to address constraints

The constraints faced by different actors in the supply chains of the selected products needs to be addressed in a holistic manner. In the natural products sector, intervention to address constraints should also be targeted towards categories that have a direct bearing on the target constraint. For example, problems related to markets are also affected by lack of standardised and homogenous products, lack of appropriate technologies etc. It has been observed in some cases that it is not only the functional areas of the enterprise that needs intervention, but the social, environmental, and organisation aspects (community level) are also equally important.

Most of the mountain areas of the HKH being remote and inaccessible provide fewer incentives for many support institutions to work. Also, cost of delivery of services is high. In the absence of an enabling policy environment, favouring the growth and development of community based enterprises; it will be impossible to solve many of the problems they face. There are also certain constraints, which might require a longer period of, time for example developing national and regional standards. Table III below proposes a set solutions and providers of solutions to address constraints identified in the product value chains. It must be noted that not all the solutions are available in all the countries. ICIMOD as an institution with a regional mandate in the HKH can bring together different providers of solutions, trainers and institutions to address problems faced by the selected enterprises. However, these solutions have to be subsidised in order to enable enterprises to access them in order to increase efficiency, product quality, conserve resources and improve livelihoods of dependent communities.

Table III: Measures to address constraints of selected products

Constraints	Proposed Solutions	Providers of Solutions
Markets	<ul style="list-style-type: none"> • Develop product ranges compatible with large buyers • Establish enterprises based on forward linkages • Target product supply chains so as to control a major part of the chain of community enterprises • Establish enterprise support services 	ANSAB, ATI, Aid to Artisans, GAC AFE, GAC AFE BDS-MAPS, AFE
Technology/Product Development	<ul style="list-style-type: none"> • Improve technology for enhancing quality and efficient recovery • Improve access to modern technologies 	Council for Scientific and Industrial Research, Government of India ICIMOD, ANSAB, National Banks, Federation of Chambers of Commerce and Industries.
Post Harvest Technology	<ul style="list-style-type: none"> • Develop manuals for post harvest 	ANSAB, ATI, ICIMOD,

	<p>technologies</p> <ul style="list-style-type: none"> • Provide on site training to collectors and producers • Develop local standards and grades in line with international requirements 	<p>CAT</p> <p>ANSAB, ICIMOD, ATI, State Agriculture Universities.</p> <p>ANSAB, ICIMOD, ATI, Ministries of agriculture, forests of the national Governments</p>
Quality Standards	<ul style="list-style-type: none"> • Develop national and regional standards for certification of natural products • Harmonise national standards with international norms 	<p>ICIMOD, Government Agencies, NGOs, CBOs, World Wildlife Fund for Nature (WWF), World Conservation Union, UN agencies</p>
Sustainable Resource Management	<ul style="list-style-type: none"> • Develop sustainable harvesting limits • Prepare management plans for forest and common property resources • Provide long-term tenure rights to producers 	<p>ANSAB, ATI, ICIMOD.</p> <p>ANSAB, ICIMOD, Government agencies, WWF, World Conservation Union.</p> <p>Ministry of Forests, environment and agriculture of the national governments.</p>
Business Management	<ul style="list-style-type: none"> • Plan enterprise on business platforms • Provide access to services for sustaining community enterprises 	<p>ICIMOD, ANSAB, ATI, AFE, Enterprise Works Worldwide, GAC.</p> <p>National NGOs and the private sector.</p>
Productivity Enhancement	<ul style="list-style-type: none"> • Reduce losses while processing • Proper and scientific management of resources 	<p>ICIMOD, ATI, ANSAB,</p> <p>Council for Scientific and Industrial Research, Government of India</p> <p>ICIMOD, ATI, ANSAB, National Institute of Traditional Medicine, Thimpu</p>
Policy	<ul style="list-style-type: none"> • Create conducive environment for producers, processors, and private sector to invest in the natural products sector. • Create thrust on community based 	<p>Policy making agencies of the national governments.</p> <p>Donors, national governments, policy research agencies</p>

	enterprises	
Credit	<ul style="list-style-type: none"> • Provide credit to producers 	Planet finance, Micro-finance institutions, rural development banks, National NGOs through self helps groups.
Information	<ul style="list-style-type: none"> • Provide market information • Disseminate Information on unique quality of mountain natural products • Improve awareness and information on sanitary and phyto-sanitary measures 	<p>National chambers of commerce, Government departments of agriculture and forests.</p> <p>Tourism Boards, Private sector, media groups</p> <p>ICIMOD, national governments, Advocacy groups, mountain forum.</p>
Skills and Capacities	<p>Impart product quality improvement training</p> <p>Impart training on GACP and GMP.</p> <p>Impart training on all the areas of constraints at different levels of the supply chain.</p>	<p>ANSAB, ICIMOD, ATI, Aid to Artisans, National institute of design, India.</p> <p>Dabur India Ltd, GMP consultants.</p> <p>ICIMOD, ANSAB, Aid to Artisans, AFE, ATI, Council for Scientific and Industrial Research, WWF</p>

V. Conclusion

The project has been implemented following a value chain approach to understand the constraints in the value chain of select natural products and community managed enterprises of three countries of the HKH and develop training programmes in collaboration with stakeholders to address identified constraints to improve efficiency, quality and competitiveness of mountain products. This activity guided by a set of TORs was undertaken to provide inputs to FAO for the design of a regional programme.

Discussions with different stakeholders and field observations reveal problems related to markets, product development and improving productivity, participatory planning, community mobilisation, biodiversity conservation monitoring systems and standards and quality control. In most of the cases especially in Bhutan and India markets have been developed by the agencies supporting the initiatives and currently stress is on retaining the market share through improved product quality and standardisation, customer relationship management, information systems and communications, efficient post harvest technologies, positioning of products and services and market segmentation. These could be also related to silk in India, cordyceps in Bhutan and medicinal plants products, and paper in Nepal.

The other main need is for improving production and productivity of resources for example indigenous honeybees, honey and bee products, and mushrooms. With

decentralisation and devolution of natural resources management to local communities coming up in the three countries there is a need for knowledge, awareness and skills on participatory planning, social mobilisation, resource mapping and community based enterprise planning. These have been observed in the case of Matsutake mushrooms, cordyceps, tasar silk, and the medicinal plants sectors. The most important issue in sustaining enterprises on natural products is monitoring. A strong monitoring system is an essential requirement for resource conservation, developing management plans, tracking and managing changes, measuring performance, making strategic decisions and in developing an adaptive enterprise.

While training needs vary from case to case in the same product categories in different countries and also according to the stage in which an enterprise is, it is important to train stakeholders in basic issues of business management, market analysis, marketing, business planning, accounting, basic enterprise functions, delegation of authority, inventory management, procurement and supplies, record keeping, specialisation, the procedural and regulatory environment, communications, quality control, international laws and protocols, ecology and natural resources management, Good Agricultural Practices (GAP), Good Agricultural and Collection Practices (GACP), and biodiversity conservation and assessments. This will not only develop skills but also assist in the sustainability of community managed enterprises. These will also be important in planning and promoting new enterprises in the natural resources sector.

Many of the trainers and service providers might not be available in the target countries and ICIMOD can facilitate and bring together service providers, trainers, organisations and into a common platform with the trainees and recipients and enable sharing of information and conduct training programmes. ICIMOD has a pool of subject matter specialists with vast years of training experience and they could also provide trainings in their area of expertise.

5.1 Training Scenario in the target countries

Training and skill development programmes to improve the capacities of producers in establishing new enterprises are carried out by the Governments, NGOs and other international organisations like ILO (SIYB), and GTZ (CEFE). The Ministry of Small Scale Industries, Entrepreneurship Development Programme (EDP), Government of India, Ministry of Cottage Industries, His Majesty's Government of Nepal, Ministry of Trade and Industry, RGOB conduct training programmes on enterprise and skill development. There are also other programmes like micro credit, income-generating schemes, exposure visits, micro-enterprise development programmes, etc run by the Governments and NGOs.

Most of the Government programmes in rural areas are for **individuals** and cover areas such as poultry, food processing, piggery, dairy, handlooms and handicrafts, pottery, beekeeping etc. However there are also conflicting interests as in the case of honeybees where the Governments promote the European bee *Apis mellifera* beekeeping (which is much more costlier), neglecting the indigenous *Apis cerana* which are mountain specific and which communities have traditionally been practicing. Government programmes provide tailor made trainings and there are no follow up. They provide technical skills, but do not assist in marketing the products except for Bhutan where the not-for-profit sector is still in an embryonic stage. Most of these training programmes are not related to NRM and community based enterprises are not included in any such

programmes.

Most of the training for rural producers for natural products is carried out by the projects implemented by NGOs and other international agencies. Project personnel with technical backgrounds provide the training to producers and local institutions and often they develop their own training programmes and modules based on their project needs. Training programmes are mainly concentrated towards the producers as other intermediaries in the supply chain run their businesses based on their own skills and networks and producers are heavily dependent on them. There are very few instances where projects have promoted marketing institutions, which assist rural producers in selling their produce after value addition. There are some training centres for handlooms and handicrafts, medicinal and aromatic plants cultivation and processing, and beekeeping mostly promoted by the not-for-profit sectors. Government agencies like universities and research centres also provide trainings on beekeeping, mushroom cultivation etc. Many research projects also provide trainings but these are piecemeal approaches and there is a lack of customised and product specific long-term training and development programmes with appropriate follow up mechanisms.

5.2 Training Needs in the Region

Capacity building programmes targeting the supply chains of products have not been tried in the region except for a few cases. The supply chain approach has been taken by agencies who work on the entire value chain of the product from production till it reaches the end customer. The business development services approach is in its infancy in the region. However some private sector institutions are emerging and they could provide such services provided that there exists good markets for the products and producers and the stakeholders have the ability and willingness to pay for such services. There are also individual trainers and subject matter specialists who are hired by different projects to impart training or offer consultancies in their area of expertise.

There are different training manuals developed for the promotion of rural enterprises, natural products, market services, business development services, market appraisal and also for specific products and services such as honey bees and mountain tourism. However not all are mountain specific and they have been tested and developed from projects implemented throughout the world. There are also tool kits for rapid rural appraisal, participatory rural appraisal, appreciative participatory planning approaches, and small-scale enterprises. From the meetings conducted it was evident that very few people are aware of such manuals and never used any of them apart from the ones that have been developed by their project.

As a lot of efforts and resources have gone into the development of mountain products and the process has gathered a lot of knowledge regarding the use of specific models for harnessing mountain niches as a tool for sustainable development of the HKH, especially for the poorest people who live in this region. There is great opportunity for up scaling and replication of successful and good practices through training programmes. This is where the added value of the proposed training programme of MPP lies. With a specialized training programme, the knowledge generated through different projects can be further crystallized and disseminated, making a greater contribution to the policy and capacity building of partners on the region.

Many manuals were developed years ago and have not been updated. There is

a need for further discussions to strengthen the need for new and updated manuals. There is also a need to develop training manuals and resource kits that can be customised to different situations and needs even while being used for diverse natural products. The mountain specificities should be included in such manuals and trainings should be targeted to different stakeholders in the value chain such as the producers, processors, and exporters. In case an enterprise carries out most of the functions in the value chain targeted training programmes for different processes and functions in the enterprise would be important rather than a generalised planning and development approach. Training programmes should match the business objectives of the enterprises to attain the required changes in skills and behaviour. Training manuals should also be developed for the different levels of stakeholders who have a role in sustainable development for e.g the producers themselves, the programme/project managers, the policy makers etc. Training courses using such manuals should provide hands on experience or learning by doing and simulation exercises to the extent possible, instead of only lectures and template trainings so that a thorough understanding of the process is gained during the training programme.

Training programmes should have follow up sessions with guidelines to monitor impacts and deviations from the desired results if any. There should be processes set for ensuring implementation of the learning and for measuring effectiveness. This is important as most training programmes are for short durations and emphasise only on changing skills, without considering the change in behaviour and attitude, which is a process and cannot be achieved in a short time period. Change is a slow process of first acquiring the knowledge of “**what to do and why**” then the skill of “**how to do**” and finally the attitude of “**I will do it.**” There is a need that all training programmes also involve the line management or managers to take responsibility for the change rather than depending on the trainers and the training sessions only.

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Annexure I:

Terms of Reference for MPP Phase II

Description of Activities/Services

The Recipient Organization will assist FAO in carrying out Phase 2 of the “Mountain Products Project” by executing the following activities:

- Selecting high value products/enterprises that will be targeted by the training programme.

The selection of target products/enterprises will be carried out based on the following economic, social, institutional and environmental criteria:

- The product already exists and is well known (at the local, national or international level) for its quality
- The unique quality of the product is linked to the natural resources and traditional production methods of the mountain region where it is produced;
- The product has potential for market expansion (from local to national or international level)
- The enterprise contributes to conservation of biodiversity
- The producers have organized themselves into structured groups, associations or producer cooperatives
- The producers show entrepreneurial spirit and motivation (e.g. Have participated in trade fairs)
- There exists an enabling institutional context (i.e. existence of supporting institutions, such as local government, NGOs, research institutions, credit organizations)
- The producers have already established some linkages with these supporting institutions

- Selecting the target audience of the training programme (i.e. who is going to be trained?)

- Carrying out an assessment of training needs of selected actors.

This could be achieved through questionnaires and telephone interviews.

- Conducting a survey of existing training materials and other related information for development of mountain small-scale enterprises.

This will include collecting, synthesizing and analysing materials with a view to selecting the most appropriate tools to be included in an FAO Resource Kit targeted at organizations working with mountain producers.

- Developing a proposal for a regional training programme in the Hindu Kush Himalayan region based on the information collected in the above surveys.

The proposal will contain recommendations on:

- The Organization that could host the training programme;
- The trainers;
- The target trainees;
- The training material to be used
- Funding resources

- *Participating in an expert meeting to be held in February 2005 to identify the main components of the Resource Kit and resources needed for its development.*

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