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ROLE OF NATURAL PRODUCTS IN RESOURCE MANAGEMENT, POVERTY ALLEVIATION, AND GOOD GOVERNANCE

A CASE STUDY OF JATAMANSI AND WINTERGREEN VALUE CHAINS IN NEPAL

Photo of Jatamansi by KK Shrestha
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ACRONYMS

ANSAB	Asia Network for Sustainable Agriculture and Bioresources
CFUG	Community Forest User Groups
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
DFO	District Forest Office
DDC	District Development Committee
FECOFUN	Federation of Community Forest Users of Nepal
FSC	Forest Stewardship Council
HBTL	Himalayan Bio Trade Limited
HNCC	Herbs and NTFPs Coordinating Committee
HPPCL	Herbs Production and Processing Company Limited
HMG/Nepal	His Majesty's Government/Nepal
HJSS	Himali Jadibuti Sarokar Samuha
LO	Lotus Opportunities
MFSC	Ministry of Forests and Soil Conservation
MIS	Management Information System
NNN	Nepal NTFP Network
NTFP	Non Timber Forest Products
NGOs	Non Governmental Organizations
NFA	National Forest Association
OP	Operational Plan
SBTG	Sustainable Bio Trade Group
SNV	Netherlands Development Organization
USAID	US Agency for International Development

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EXECUTIVE SUMMARY

Close to 40,000 people derive economic benefits from essential oils harvesting, trade and processing in Nepal. Essential oils are a subset of the natural products sector, also know as nontimber forest products in Nepal, which generated over Rs. 2.5 billion (about US $34.2 million) in trade for Nepal in 2004. Over the last decade the Nepal natural products sector has undergone significant changes with the increase in community forest user rights and increased local processing. This has given Nepal an opportunity to expand beyond its dependence on Indian markets, but also highlighted how much more work Nepal needs to become competitive in world markets for natural products while sustainably managing the unique biodiversity of the natural products harvesting areas.

The FRAME sponsored study, a program of USAID, surveyed actors throughout the Jatamansi and Wintergreen value chains, in representative production, trade and processing areas of Nepal. Jatamansi and Wintergreen are aromatic natural products that are processed into essential oils for perfumes, personal care, and medicines. The study mapped the nature, wealth and power dynamics of the essential oils sector in Nepal using Jatamansi and Wintergreen as example products within the product class of essential oils and the larger sector of natural products. Jatamansi and Wintergreen provided a contrast in export and domestically consumed natural products and demonstrated that there is potential for essential oils in both markets. Raw Jatamansi and oil are an export product for Nepal. The value chain dynamics have changed significantly in the last decade from over 90% traded illegally in raw form to India, to 75% now processed into essential oil in Nepal. Wintergreen has 100% processing in Nepal with 90% of the oil sold on the domestic market.

Community Forest User Groups have become stewards of Nepal's unique biodiversity and established sustainable local NTFP processing.

Study results were presented to a cross section of the non-timber forest product (NTFP) actors at a workshop in Kathmandu in December 2005 and the following were the top recommendations to improve the sector's performance.

- The Community Forest User Group (CFUG) program has been instrumental in improving resource management, instituting sustainable harvesting, and organizing harvesting communities to gain more benefits within the Wintergreen and Jatamansi value chains, but only where assisted by NGOs. There are still many CFUGs that lack effective operational plans and more needs to be done to assist CFUGs to understand the value chains for natural products.

- Processing close to the harvesting areas would reduce high transport, storage, and multiple trade expenses that increase the cost structure for Jatamansi and limit the amount of Wintergreen harvested (since Wintergreen has to be processed quickly after harvesting).

- Nepal has a unique selling position it can exploit in overseas markets with sustainable, fair trade and organic markets. Forest stewardship and organic certifications are in place for some products and areas and now uniform quality control and consolidation of supply from various locations is needed. Nepal also needs to invest in quality control (proper storage, testing facilities, and uniform documentation) to be able to compete in world markets and break its dependence on India as its primary export market.

- Improved coordination among Nepali regulatory bodies, reducing overlapping jurisdiction among Nepali agencies with regards to NTFP promotion, harvesting, and processing, as well as more reasonable tax rates would reduce transactions costs within the value chains, promote more enterprise start-ups and help to make Nepali essential oils more competitive in world markets.

1. INTRODUCTION

1.1. JATAMANSI AND WINTERGREEN

This study focuses on Jatamansi and Wintergreen: two aromatic plant products in Nepal that are considered non-timber forest products (NTFPs). Jatamansi (*Nardostachys gradiflora*) is found in high altitude meadows of the Himalayas and Wintergreen (*Gaultheria fragrantissima*) is found between 1,500 and 2,700 meters in central Nepal. Both are processed into essential oils. Collection and trading of non-timber forest products (NTFPs) is a traditional economic activity in Nepal. Utilization of plant resources is expanding as more people recognize their value for health, environment and social justice (Rawal, Acharya, and Subedi, 2001). NTFPs constitute a significant portion of the rural economy and are locally consumed by communities living adjacent to the forest. Growing market opportunities for NTFPs provide real potential to raise local people's income, contribute to the national economy, and provide biodiversity conservation incentives.

In the rural areas of Nepal, where NTFP resources are relatively abundant and other income generating opportunities are limited, essential oil plants offer a good prospect for enhancing the livelihood and incomes of local communities. Yet, these opportunities are tapped on a limited scale due to a lack of entrepreneurial capability, marketing knowledge, and financial resources.

1.2. STUDY SAMPLE, KEY VARIABLES, CRITERIA FOR SELECTION OF SITES

FRAME, "Knowledge Sharing for the Natural Resource Community," a United States Agency for International Development (USAID) supported program, has sponsored this value chain study for Jatamansi and Wintergreen. The FRAME study seeks to open up a dialogue among natural resource managers and stakeholders within the framework of Nature (environmental management), Wealth (economic concerns) and Power (good governance) to better understand the different needs and interests of the various stakeholders involved with these important natural products.

Both primary and secondary level data were collected. Primary data were gathered through surveys, personal interviews and key informant interviews, telephone inquiries, focus group discussion, participant observation and ocular inspection. The institutions which were sources of data include: District Forest Office (DFO), District Development Committees (DDC), Federation of Community Forestry Users, Nepal (FECOFUN), Asia Network for Sustainable Agriculture and Bioresources (ANSAB), Himalayan Bio Trade Limited (HBTL), Sustainable Bio Trade Group (SBTG), Herbs and NTFPs Coordination Committee (HNCC) of the Ministry of Forests and Soil Conservation (MFSC), local manufacturing companies, NGOs, and other government officials. In addition to data collection from the groups noted above, four survey instruments were developed to facilitate data gathering from: (i) Jatamansi and Wintergreen harvesters; (ii) Community Forest Users Groups (CFUG); (iii) Traders; (iv) processors (oil distillation); and (v) wholesalers/exporters. The number of interviews conducted for the entire study was 31: 16 harvesters, five CFUGs, five traders, four oil processors, and one wholesaler. Focus group discussions and key informant interviews were conducted with two manufacturers, two national traders, and 14 representatives from grassroots to national level stakeholders representing government and non-government institutions.

1.2.1. PRODUCT SELECTION

Jatamansi and Wintergreen were selected for investigation based on the following criteria developed by the study team.

- Products have demonstrated commercial value at the national, regional or international levels in order to attract local participation.

- Products offer opportunities for value-addition and increased productivity at the local level, thereby leading to poverty alleviation.
- Products are available in sufficient quantity to allow for sustainable commercial harvesting and have the potential to be brought under locally managed regeneration systems and/or domestication.
- Products involve a complex interplay of several actors with varied levels of access and control, and offer opportunities for good governance interventions.

It is recognized that these are not the only essential oil products that have potential value in Nepal. However, based on the above criteria and the market information known to the study team, these products appeared to have the highest potential for market development. Many of the dynamics noted for Wintergreen and Jatamansi also apply to other essential oils in Nepal.

1.2.2. STUDY SITE SELECTION

While Jatamansi and Wintergeen are found throughout Nepal, Jumla and Dolakha districts were picked for field work for the following reasons:

- The existing natural resource base acts as a significant local source of products for subsistence and economic activities.
- Large volumes of Jatamansi and Wintergreen are currently harvested from these districts, and potential exists for their expanded commercial activities.
- Distillation units have operated or are operating in both districts.
- The community is organized and motivated to manage the resource base and undertake enterprises in a sustainable manner.
- It is safe to travel to the districts.
- It is possible to conduct fieldwork in the given study period.

For Jatamansi, Humla district, where there are two distillation plants, was also incorporated into the study using detailed field records and key informant interviews, but the team did not visit the site during the study.

2. STRUCTURE AND OPERATION OF THE JATAMANSI AND WINTERGREEN VALUE CHAINS

2.1. PHYSICAL FLOW OF JATAMANSI AND WINTERGREEN

Figures 1 and 2 give the physical flow of Jatamansi (2004) and Wintergreen (2005) in Nepal. Note the width of the arrows is proportional to the volume of trade in each product.

Figure 1. Physical Flow of Jatamansi (204,648 raw kgs)

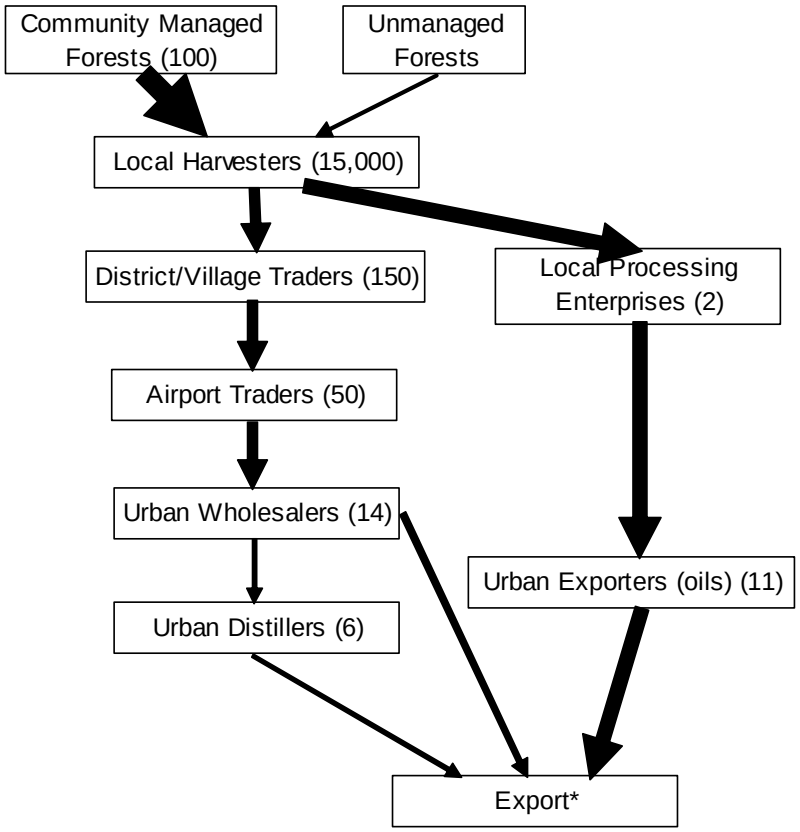
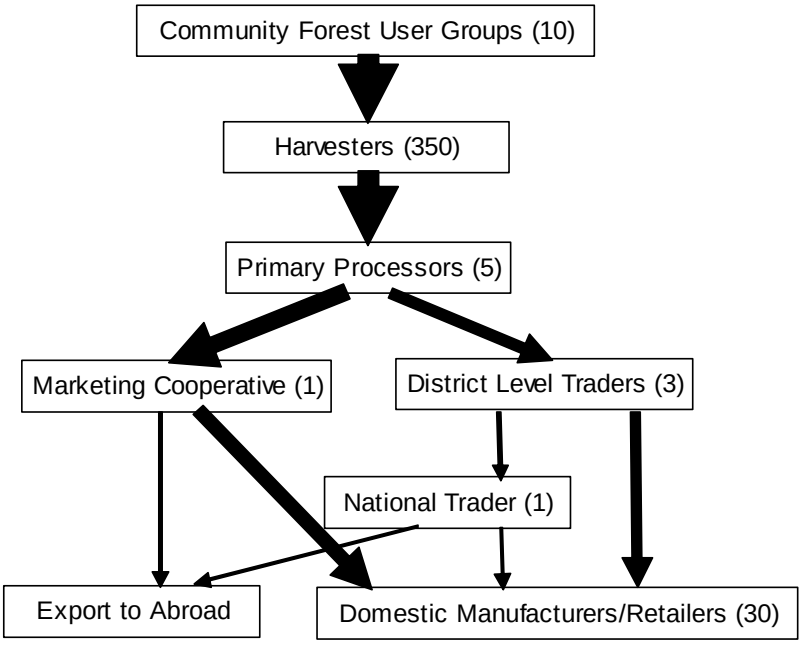


Figure 2. Physical Flow of Wintergreen (375,000 raw kgs)



2.2. MARKET ACTORS

Various actors are involved in the essential oil value chains of Jatamansi and Wintergreen. The number of actors involved in the Jatamansi chain is higher than Wintergreen due to Jatamansi's higher commercial value, and raw and oil exports. There are six main types of actors involved in the essential oil value chain: 1) harvesters; 2) community forest user groups (CFUGs); 3) local distillers; 4) traders (district/village traders/agents, airport traders/contractors, urban wholesalers); 5) urban distillers/exporters/national traders, and 6) domestic manufacturers.

2.2.1. HARVESTERS

The most numerous actors in the essential oil value chain are the poor and marginalized groups of people in rural villages who harvest NTFPs including Jatamansi and Wintergreen. According to the Department of Forests there are a total of 7,772 Jatamansi harvesters throughout the country. However, discussions with key stakeholders involved at various stages of the chain estimated the number to be about 15,000. Jatamansi is found in the upper mountains and harvesters often have to stay overnight during collection trips. The harvesters dig up the Jatamansi rhizomes, clean them of dirt, dry them in the sun and package Jatamansi for sale. Dried Jatamansi is either sold to district/village traders or if there is a local distillation plant, the harvester would sell the raw materials to the processing plant.

Some of the poor and marginalized families receive an advance payment from traders in the village or from outside to collect Jatamansi, as well as other NTFPs for the next season. This requires a commitment from the harvesters to supply a given product to the same "petty contractor" at a predetermined price. The local "petty contractor" (local moneylender or school teacher) then advances their own funds to the harvester to lock in the supply.

A typical Wintergreen harvester begins her day at sunrise by sharpening her *hasiya* (sickle) and walking to a nearby forest area. She moves through the forest from one clump to another, cutting leaf-sheaths. The harvester returns and delivers the Wintergreen to a local processing unit. No overnight stays in the forest are required. Wintergreen collecting is categorized into travel to and from the worksite, searching for and cutting Wintergreen, and carrying Wintergreen to a distillation unit. The distillation unit pays each collector weekly or biweekly, and does not provide advances to the harvesters. All raw Wintergreen is processed at the local level.

2.2.2. COMMUNITY FOREST USER GROUPS (CFUGS)

There are over 14,000 Community Forest User Groups across Nepal (Department of Forest, 2005). Their management capabilities vary tremendously from ineffectual to profitable value-adding processing entities with strong resource management and governance skills. CFUGs, as owners of the forest areas, provide the letters of clearance for harvesting and export of the NTFPs in raw and processed forms from the districts. When CFUGs are well managed and have their members organized for effective NTFP collection, they are also able to either set up their own processing facilities or enter into agreements with private individuals to operate distillation units near the harvest areas.

In the study area for Wintergreen, CFUGs are the key owners of raw Wintergreen because almost all Wintergreen is collected from community forests. The role of CFUGs in the value chain has gradually increased in Dolakha due to the active role of ANSAB in promoting NTFPs by facilitating FECOFUN at the district as well as central levels. Without a close collaboration with the CFUGs, it would have been impossible to establish the Wintergreen oil distillation units in the district. After entering into an agreement with a distillation unit, CFUGs give permission to collect Wintergreen from their forest. Harvesters do not have to pay a royalty directly to CFUGs. CFUGs get NRs 0.25 per kg of raw Wintergreen as a conservation fee from the owner of the distillation unit. The relationship between the distillation units and CFUGs was found to be good. The CFUGs give a letter of clearance to the local traders or marketing cooperative to export Wintergreen oil to Kathmandu.

A similar situation exists for Jatamansi and various distillation units have been set up with CFUG participation and similar royalty and clearance arrangements. The CFUGs that have Jatamansi in their operational plans also help to organize the harvesters and conduct biological monitoring.

2.2.3. LOCAL DISTILLERS

Local essential oil processors have the most dominant effect on the NTFP sub-sector in the mountains. Local processors are a readymade market for local products and can influence the price of raw materials across the market channel. Two types of distillation units are involved in oil production: privately owned and managed by cooperatives/CFUGs. In terms of production capacity, number of employees, and buying behavior, there is no difference between the private and cooperative distillers. Ownership structures do differ. Cooperative enterprises involve about 25 community members while private enterprises have individual owners.

Local Jatamansi Distillation Unit in Humla, Nepal

Local distillers have bid up the price for raw Jatamansi and drastically reduced its transport cost (about 1 to 2 kilos of oil is transported to Nepal market centers in contrast to 100 kilos of the raw herb). The individual collectors, who are shareholders, receive dividends on their shares according to the net profits at the end of the year; several local people get processing jobs. Currently, there are two steam distillation plants operating in Humla that have a total production capacity able to process 20,000 kg raw materials into essential oil (Jatamansi, Sugandawal) per annum (ANSAB, 1999). Two privately operated distillation plants have closed in Jumla due to working capital issues. When local distillation units have been assisted by NGOs, biological monitoring and improved forest operational plans have also been done.

For Wintergreen, cooperative managed enterprises are important not only for their financial benefits but also for their socio-economic benefits. ANSAB helped Devdhunga Multipurpose Cooperative in Dolakha establish a Wintergreen distillation enterprise for production of essential oil at three different locations:

Napke, Jhyaku and Karidhunga. This enterprise created part-time employment for about 300 community people through Wintergreen collection and fuelwood collection. It also employed six direct laborers in its daily activities. Wintergreen distillation units are located near the community forests and villages. The processing unit is very simple: two laborers are required to work in each unit. Each laborer working at the distillation unit gets Rs. 3,000 per month (Rs. 100 per day) and two meals a day.

Both Jatamansi and Wintergreen distillers use steam distillation units that are powered by fuel wood and other local biomass. Plant material is loaded into the main chamber and steam passes through the chamber and is then transformed into liquid in the condenser and finally flows to a container where the oil is separated from the water.

2.2.4. TRADERS – VILLAGE/DISTRICT TRADERS/AGENTS; AIRPORT TRADERS/CONTRACTORS, AND URBAN WHOLESALERS

Traders, next in the value chain, buy raw Jatamansi or Jatamansi or Wintergreen oil and do not transform the product in anyway. Harvesters of raw Jatamansi, if they do not sell to a local distiller would sell to a village/district trader. The village/district traders are local moneylenders, school teachers, and relatively financially well-off by village standards, and often work for the airport trader/contractor. A total of 150 village traders were found throughout the country. They buy Jatamansi and other NTFPs from the harvesters and sometimes they are also involved in its collection. Jatamansi is transported by human load or pack animals to the district headquarters where it awaits plane transport.

Since Wintergreen is processed at the local level, district level traders buy Wintergreen oil from the distillers. The village traders sell Wintergreen oil to the Herbs Production and Processing Company Limited (HPPCL), Kathmandu and domestic manufacturer/retail markets in Kathmandu.

Airport Trader in Nepalgunj with Jatamansi

Airport Traders/Contractors are active for Jatamansi but not Wintergreen. Since Jatamansi has to be brought out by planes that all go to the Nepalgunj airport, the traders take possession of the Jatamansi at the airport and have thus earned the name "airport traders." The number of airport traders/contractors has rapidly increased in the last ten years. A total of 50 licensed airport traders were recorded in Nepal for Jatamansi. They obtain collection and trading licenses for NTFPs and Jatamansi from the DFO. In order to get a license, they register with the Nepalgunj Internal Revenue Office and renew annually.

Urban wholesalers deal in all types of NTFP trade and mostly supply the major Indian cities. The overall market demand and product prices are controlled by the big traders in Khari Baoli (Delhi) (ANSAB, 1999). Airport traders are the major suppliers of Jatamansi to urban wholesalers. Some wholesalers come to the harvest areas to arrange product purchases. The wholesalers have been known to provide financial assistance to all the actors below them in the chain when necessary to secure supplies of the NTFPs. A total of 14 urban wholesalers of Jatamansi and other NTFPs were recorded throughout the country. Most of them are located in Nepalgunj and a few are also based in Kathmandu. The urban wholesalers often place orders for specific products with the district and airport traders.

2.2.5. URBAN DISTILLERS/EXPORTERS/NATIONAL TRADERS

There are 11 urban oil exporters in the country of which six are also urban distillers. It is very difficult to distinguish urban distillers from urban wholesalers because both of them are involved in the export of raw Jatamansi. Since Wintergreen is processed near the forest, urban distillers are not active in its processing, but they do export the oil from the local distillers.

There are five private distiller/exporters, the largest being Bahubali Herbal Industry, Nepalgunj and one parastatal, Herbs Production and Processing Company Limited (HPPCL) in Kathmandu. The remaining exporters are private, except for one cooperative trading company - Himalayan Bio Trade Ltd. (HBTL). HBTL is a producer-owned marketing company in Kathmandu that markets essential oils (including Wintergreen and Jatamansi) to India, US and European buyers.

2.2.6. DOMESTIC MANUFACTURERS

There are about 30 Nepali manufacturers who use Wintergreen oil in various medical and toiletry related preparations such as massage oil and toothpaste. Nepali Manufacturers prefer to buy Wintergreen oil from district level traders or cooperatives (due to the lower price), but also buy from the urban wholesalers. Jatamansi has almost no domestic use in manufactured products.

2.3. GROSS OUTPUT VALUES

A total of 204,648 kg of Jatamansi was harvested in 2004 of which local and national distillers consumed 153,859 kg and the remaining 50,789 kg was exported to India through illegal channels. This is a big change from a decade ago when close to 90% of the Jatamansi was exported to India in raw form. Now Nepali distillers are processing close to 75% of the Jatamansi harvested. Another big change from a decade ago is the amount of Jatamansi that is coming from CFUG areas (98%) compared to less than 10% a decade ago. The CFUGs have become more important now, due to donor assisted programs in which NGOs, such as ANSAB provided targeted assistance to CFUGs and essential oil products. Ten years ago, the areas where large amounts of Jatamansi are found had few CFUGs organized; this is no longer the case with about 100 CFUGs now active. Figures 3 and 4 provide gross output values for Jatamansi and Wintergreen by major actors.

Figure 3. Physical Flow of Jatamansi (204,648 raw kgs)

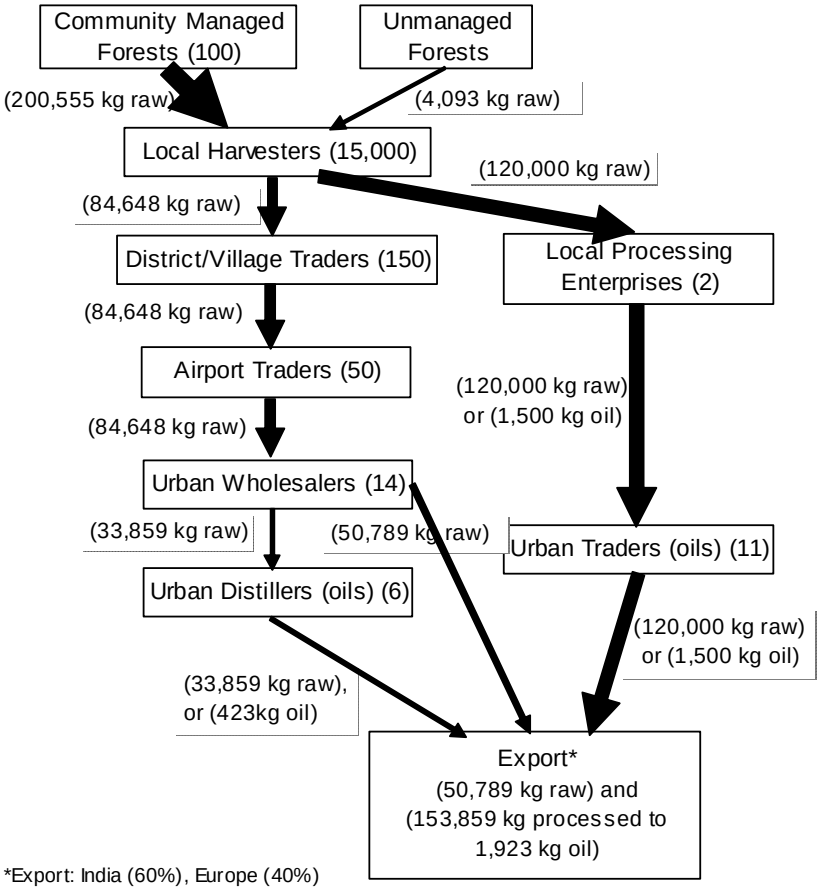
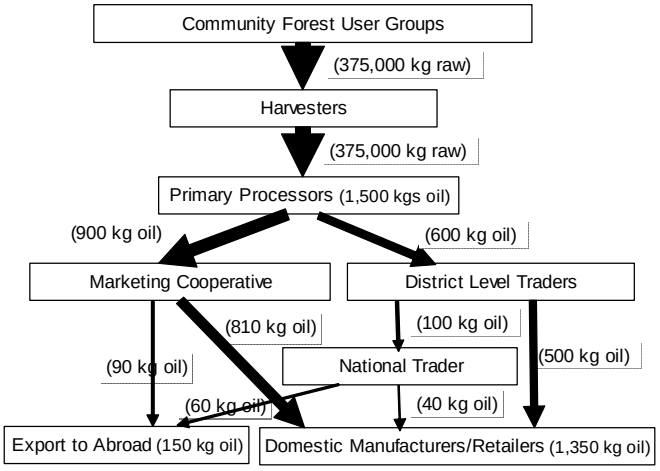


Figure 4. Physical Flow of Wintergreen (375,000* raw kgs)



* Wintergreen: 250kg raw = 1kg oil
Source: Field survey, key informant interviews at various levels, and ANSAB documents

2.4. EMPLOYMENT DIFFERENTIATING BETWEEN PERMANENT, SEASONAL, FORMAL AND GENDER ROLES

Collection and processing of Wintergreen and Jatamansi are seasonal. Collection is informal while processing is a formal activity. Wintergreen harvesters are predominantly female local inhabitants who reside 2-5 km from the forest. Some males also collect Wintergreen but only occasionally. Poor and marginalized local farmers are the main harvesters of Wintergreen.

Jatamansi harvesters are predominantly male. Involvement of women in Jatamansi collection was reported to be limited due to the distances and overnight stays involved with harvesting. The number of Jatamansi harvesters has significantly increased in the last ten years due to in-migration of Bhote people from Mugu and involvement of people from neighboring villages and districts. People from different socio-economic backgrounds were found involved in Jatamansi collection. These constitute local farmers, herders and local teachers. Three ethnic and caste groups, namely, high caste, Dalit (disadvantaged groups) and Bhote people are involved in the collection of Jatamansi. Farming is the principal occupation of most of the harvesters during the rest of the year. Other sources of income are animal husbandry, wage labor, salaried job and collection of other NTFPs.

Once Jatamansi and Wintergreen leave the districts where they are harvested or processed, the merchant caste groups and traders from the Muslim community dominate the rest of the value chain functions and are predominately men working full-time in the formal sector. For example, of the 14 urban wholesalers, six were from the Muslim community and most of the Jatamansi airport traders belong to the Terai merchant caste groups. The number of people of hill origin in the urban-based functions was nominal.

2.5. DESTINATION AND CONCENTRATION OF SALES AMONG MAJOR BUYERS AND TYPES OF BUYERS

For Jatamansi the major buyers are still in India and for Wintergreen, the major buyers are within Nepal. Over the last decade, more Jatamansi essential oil in contrast to the raw material is being sold to India, but the main markets for Jatamansi oil and the raw materials still are in Lucknow, Kanpur, Delhi, and Mumbai with about 60 percent of the overall supply going to India. Jatamansi is used in perfumes, personal care products and incense. Wintergreen is used in food flavoring, personal care products (e.g. toothpaste), and medications.

Domestic manufacturers and retailers within Nepal are the main buyers of Wintergreen oil. The Herbs Production and Processing Company, Limited (HPPCL), located in Kathmandu is typical of the type of buyer. HPPCL uses Wintergreen oil for its own production of Sancho (liquid cold medicine) which it sells to retailers and Ayurvedic companies and firms, and exports to India and abroad. However, export of Wintergreen oil from Nepal to third countries (other than India) is very small. With respect to the market price, the local contractors usually get higher prices from retailers and market traders in Kathmandu who are trying to search for markets in Europe and America. Thus retailers are the first preferred buyer of Wintergreen oil in Kathmandu. The share of Wintergreen oil in the international market was reported to be less than 10 percent, with domestic Nepali manufacturers buying 90 percent of the Wintergreen oil.

2.6. PRICE STRUCTURE

Tables 1 and 2 give an overview of the price structures including selling prices, expenses, and margins for Jatamansi and Wintergreen.

Table 1: Margins, Prices and Expenses by Major Actors for Raw Jatamansi

Actor	Margin per kg	Selling price per kg	Expenses per kg*
Harvesters	50*	50	0
Village/District Traders	10	60	50: Made up of Jatamansi (50)
Airport Trader	21	150	129: Made up of Jatamansi (60); government royalty (15); DDC tax (6); local porter transport (6); handling and packing (4); storage at district airport (7); other expenses (6); air transport to Nepalgunj (21); storage at Nepalgunj (4)
Urban Wholesalers	25	200	175: Made up of Jatamansi (150); transport costs to India including costs to get good across the border (25)
Local Processors	23 (return per kg of raw Jatamansi processed)	8,000 (kg of oil)**	6,427 costs per kg oil: Made up of Jatamansi (4,020); Government royalty (1,005); DDC local tax (402); processing and airfreight costs (1,000)

Sources: Aryal (1993), Himal, SSS report, ANSAB (for 1998/99) Humla business plan/feasibility study (for 1993/94), ANSAB MIS records and fields survey-2005 (for 2004).
*Some harvesters reported having to pay Rs 2 per kilo of Jatamansi collected to the Moaists. Expenses do not include time invested by the actor, with the exception of distillation worker salaries for local processing. **Change in product from raw Jatamansi to oil. Assumes 1.5 percent oil extraction rate per kg of raw Jatamansi.

Table 2: Margins, Prices and Expenses by Major Actors for Wintergreen Oil

Actor	Margin per kg	Selling price per kg	Expenses per kg*
Harvesters	312	312	0
Local Processors	76	700	624: Made up of Wintergreen (312), conservation fee paid to CFUGs (62), and oil processing costs (250)
District Traders	80 – 130	800 – 850	720: Made up of Wintergreen oil (700), handling and packaging (10), transportation to Kathmandu (10)
National Traders (domestic sales)	90	950	860: Made up of Wintergreen oil (800), storage, re-packaging, and quality testing (60)
National Traders (export sales India)	340	1,400	1,060: Made up of Wintergreen oil (800), storage, re-packaging, and quality testing (60), export permits and certifications (200)
National Traders (export sales US and Europe)	540	1,700	1,160: Made up of Wintergreen oil (800), storage, re-packaging, and quality testing (60), export permits and certifications (300)

Source: Field survey and information obtained from HPPCL and HBTL, 2005.
*It takes 250 kg raw Wintergreen to produce one kg of Wintergreen oil. A harvester earns Rs1 to Rs1.5 per raw kg of Wintergreen or on average Rs1.25 x 250 = Rs312 per kg oil equivalent.
Expenses do not include time invested by the actor, with the exception of distillation worker salaries for local processing.

2.7 EVALUATING VERTICAL INCOME AND PROFIT

Income and profit margins are good for each actor in the vertical chain, but there are varying risks and market fluctuations and seasonal weather conditions that can distort income within the chain from year to year. Over the last decade, CFUG organization and local processing have improved income and profit margins for the harvesters, especially as they have more selling options. The processing entities seem to be the most volatile; changes in market demand impact their bottom line the fastest. The traders had the most stability when it came to income and profit levels.

2.8. EVALUATING HORIZONTAL DISTRIBUTION OF INCOME AND PROFIT

Tables 3 and 4 summarize the horizontal distribution of income and profit among the major actors for Jatamansi and Wintergreen.

Table 3: Horizontal Distribution of Income and Profit for Major Actors in Jatamansi

Actor	Income/Profit Distribution within Group
Harvesters	Skewed (40% poor people and 60% Middle class people (gatherers operate 4 months)
Village Traders	Skewed
Airport Traders	Skewed (60% traded legally and 40% traded illegally)
Distillers	Skewed
Urban Wholesalers	Skewed

Table 4: Horizontal Distribution of Income and Profit for Major Actors in Wintergreen

Actor	Income/Profit Distribution within Group
Harvesters	Fairly distributed to the marginalized group (gatherer operates 8 months)
Community Forest User Groups	Skewed (depending on the quantity of raw material available in the CFUGs)
Distillers	Fairly evenly distributed
Marketing Cooperative	Only one
District Level Traders	Fairly evenly distributed
Nepali Manufacturers	Skewed
National trader (for selling in Indian Market)	Only one
National Trader (for selling in America or Europe)	Only one

The average annual income from Wintergreen varies among the harvesters depending on their household labor availability and socioeconomic condition. The relatively low number of traders and exporters nationwide has resulted in both perceived and actual price fixing with further accusations that the rich traders collude on price and dominate the smaller players. The processors and marketing cooperative are not sufficiently motivated to establish new Wintergreen processing units due to stagnant market price and monopoly price fixing by HPPCL, the one national trader.

3. ANALYZING THE NATURE, WEALTH AND POWER DIMENSIONS OF THE VALUE CHAIN

3.1. NATURAL RESOURCE MANAGEMENT MAPPING AND RESOURCE TENURE

3.1.1. CURRENT FORM OF RESOURCE TENURE SYSTEM AND MANAGEMENT SYSTEM

The current form of resource tenure is regularized from two levels, i.e., District Forest Office (DFO) and Community Forest User Groups (CFUGs). The DFO issues licenses for forest products collection from government-managed forests (i.e. DFO system), and for the forests which are already handed over to local communities, the local community manages the forests with explicit harvest rights (i.e. the CFUG system). Depending on the natural product collected, the distribution of tenure instruments varies. For example, for Wintergreen, CFUGs have taken a more prominent role as they become organized. For Jatamansi, CFUGs are involved and at higher levels than five to ten years ago, with far fewer private license holders active. The different stakeholders such as the DFO, individual collectors, CFUGs, DDC/VDC, license holder traders, security persons, wholesalers, processing industries and exporters are directly or indirectly involved in natural resource management.

CFUGs are required to complete operational plans (OPs). The operational plans must mention provisions for timber and NTFP harvest, use, and management. It is therefore mandatory that each CFUG desiring to manage and harvest NTFP resources from community forests mention in detail the NTFPs, such as Wintergreen and Jatamansi in its operational plan (OP). This process involves approval of the plan through a CFUG general assembly and thereafter approval from the DFO (ANSAB, 2002). Approval of operational plans that include NTFPs can also allow the CFUGs to collect fees/royalties on the products and use these fees for conservation and community development activities.

3.1.2. EXISTENCE OF TRADITIONAL MANAGEMENT PRACTICES

The Forest Nationalization Act of 1957 disrupted traditional systems that typically operated under the common property regime and essentially converted lands into an open-access system. Prior to 1957, local communities governed their forests through village institutions. The Forest Act 1993 was a major turn-around in the policy that established the tenurial nature of NTFPs and has started to re-invigorate traditional management.

Traditional management, now manifested through the CFUG program, allows the villages to come up with use and management plans and govern their members. For example, traditional management includes group harvesting at agreed upon times for Jatamansi and individual women harvesting Wintergreen. There are over 14,000 CFUGs across the country with a wide range of capacity and land area. Where CFUGs have received assistance to reinvigorate the traditional practices with the new requirements of the CFUG program, as well as have significant hectares (hundreds of hectares in contrast to under 100) there has been effective local governance. Groups receiving less assistance still struggle to integrate the traditional practices back into their

forest management and in some areas are therefore overshadowed by private license holders who are better organized and have outside contacts within the value chains.

Large forest areas still fall under the managerial control of the DFO. For these areas, traditional management practices are almost non-existent and the open tenurial access promotes unsustainable harvest. In external evaluations, it has been noted that when CFUGs are given larger areas of land and assistance with their operational plans and monitoring, resource management improves. In contrast, free-for-all access in unguarded government lands results in harvesting immature Jatamansi rhizomes, generally in advance of ripening of the seeds leading to steady depletion of the resource base (ANSAB, 2002).

3.1.3. JATAMANSI AND WINTERGREEN, QUALITY, ABUNDANCE, HARVEST RATES OVER TIME, AND SUSTAINABILITY AND BIODIVERSITY IMPLICATIONS

The forests and pastures where Jatamansi and Wintergreen are harvested host globally significant biodiversity and in many cases species of plants endemic to Nepal. Nepal is remarkably diverse in flora and fauna due to its mountainous topography. Numerous side ranges and shoulders extend in all directions from the main Himalayan chain, creating a complex mosaic of biologically isolated high altitude ridges and deep valleys. The complex vertical topography acts to restrict gene flow across the landscape. Nearly 7000 species of higher plants are found in Nepal, out of an estimated 9,000 species found in the eastern Himalaya as a whole, 39% of which are endemic to this mountain range (Myers 1988, Myers 1990). Faunal diversity is also high, including some 800 species of birds.

Since Jatamansi and Wintergreen require pasture and forest ecosystems respectively to flourish, their increased economic importance has actually led to overall biodiversity conservation in areas where management plans are being instituted. For example, pasture burning which destroyed many plant species and decreased habitat for fauna has been stopped in Humla when it was learned it also impacted the Jatamansi levels.

The forests of Nepal

While the unique topography creates rich biodiversity, it makes detailed data collection on Jatamansi and Wintergreen abundance and quality levels difficult to collect on an ongoing basis. Neither FECOFUN nor DFO have adequate data about the exact availability of Wintergreen and Jatamansi in different community forests. However, available secondary data (see Tables 5 and 6) and discussions held with different stakeholders indicate that there are good supplies of both plants, but specific area sustainability plans may need improvement to correct localized over-harvesting issues. For example, over-utilization of Jatamansi and underutilization of Wintergreen was repeatedly reported in the course of the study field visits. Although for Jatamansi, other studies have shown overall there are good stocks and it is more an issue of over-harvesting in the most accessible areas combined with improper harvesting methods while other Jatamansi areas remain pristine.

The most recent verification of the abundance issue came in 2005 with a field assessment by the Forest Stewardship Council (FSC). The FSC certification process did assess, for a sampling of CFUGs, the availability and suggested sustainable harvesting levels for Jatamansi and Wintergreen (among other natural products) and also concluded that expansion could happen, but needed to be closely monitored. FSC requires annual field audits to check on forest and social conditions and as more groups can join the FSC certification it is hoped that more CFUG areas will come under better management. The FSC certification report does give maximum harvest levels and monitoring and record keeping protocols to be observed. The initial areas that were certified for Wintergreen, Jatamansi, and other products just recently passed their first FSC audit.

Table 5: Harvesting and Biological Capacity Status of Jatamansi in Nepal

S.N.	Districts	No. of Harvesters	Annual Quantity Harvested (Average of Last 5 Years in Kilograms)	Annual Production Capacity, Kg (Estimated)
1	Baglung	20	83	5,000
2	Bajhang	100	0	1,500
3	Bajura	200	321	2,500
4	Dailekh	50	289	10,000
5	Darchula	300	117	10,000
6	Dolakha	20	901	1,000
7	Dolpa	2,000	9,510	70,000
8	Gorkha	300	2,512	20,000
9	Humla	1,500	12,596	75,000
10	Jajarkot	200	5,396	30,000
11	Jumla	2,000	43,629	100,000
12	Kalikot	80	458	15,000
13	Lamjung	150	282	25,000
14	Manang	50	883	20,000
15	Mugu	150	8,215	70,000
16	Mustang	12	33	1,500
17	Mygadi	5	3	1,000
18	Nuwakot	400	2,218	15,000
19	Ramechhap	0	0	1,200
20	Rasuwa	30	1,318	5,000
21	Rolpa	75	25	3,500
22	Rukum	75	227	4,000
23	Sankuwashava	0	0	1,000
24	Sindhuli	0	0	1,500
25	Sindhupalchok	40	290	2,000
26	Solukhumbu	0	0	2,000
27	Taplejung	15	69	1,500
	Total	**7,772**	**89,375**	**394,200**

Sources: *Hamro Ban*, a vernacular periodical published by the Department of Forest, HMG/Nepal and different DFO Offices.

Table 6: Harvesting and Biological Capacity Status of Wintergreen in Nepal

SN	Districts	Wintergreen		
		No of Harvesters	Annual Harvested Quantity (Average of Last 5 Years)	Annual Production Capacity Kg/Year (Estimated)
1	Solukhumbu	0	-	400,000
2	Sankhuwasabha	0	-	30,000
3	Pachthar	0	-	7,000
4	Okhaldhunga	0	-	150,000
5	Ilam	0	-	50,000
6	Ramechhap	100	100,000	400,000

SN	Districts	Wintergreen		
		No of Harvesters	Annual Harvested Quantity (Average of Last 5 Years)	Annual Production Capacity Kg/Year (Estimated)
7	Sindupalchok	50	75,000	200,000
8	Nuwakot	0	0	400,000
9	Rasuwa	0	0	300,000
10	Dolakha	200	160,000	700,000
11	Kavrepalanchok	0	0	300,000
12	Lalitpur	0	0	15,000
13	Dhading	0	0	50,000
14	Makawanpur	0	0	50,000
15	Bhaktapur	0	0	50,000
16	Mygadi	0	0	20,000
17	Baglung	0	0	15,000
Total		350	335,000	1,437,000

Source: Essential oil production chart obtained from HBTL and information from different DFO Offices.

3.1.4. IMPACTS OF DISTURBANCES

Natural disturbances are very low for NTFPs and Jatamansi and Wintergreen in particular. Human disturbances are the bigger threat and include over-harvesting, immature harvesting, and migration of people from other areas that may convert land to farming or livestock use (including pasture burning and over-grazing).

3.1.5. OPPORTUNITIES FOR TECHNOLOGY APPLICATIONS TO INCREASE PRODUCTIVITY OR RESOURCES

Both Jatamansi and Wintergreen are collected using simple technologies (cutting and digging implements) which do the job adequately. The timing and spacing (e.g. rotations) of harvesting are where there are opportunities for technology applications to increase productivity and improve the resource condition. The quality of Jatamansi depends on several factors. According to informants, Jatamansi from snowy areas has a bigger size that contains more essential oil. Harvesting time also determines the quality of Jatamansi. Harvesters and traders report that Jatamansi collected in mid-September to mid-November is yellowish, containing the highest oil percentage in comparison to Jatamansi collected in mid-April to mid-May when rhizomes are still green and contain less oil. The worst quality, however, is collected in mid-July to mid-August when Jatamansi turns black and the dried raw material is mixed up with the soil. Raw Wintergreen, on the other hand, is collected by local inhabitants from the nearest community forest over a six-month period (late spring through fall).

For sustainable harvesting, DFOs and NGOs have started to assist CFUGS to institute a block rotational system for the collection of Wintergreen and Jatamansi. CFUGs in Dolakha were found to be effectively implementing their operational plans which included this system. Local language information sheets on scientific harvesting, information on limited field trials, and proper harvest techniques that can be adopted by the collectors have been developed by ANSAB and distributed for both products. Where donor-assisted projects have been able to use this material in local trainings and integrate with operational plans and local CFUG governance, then improved harvesting has been noted, but much more effort in this area is needed to introduce scientific harvesting for both the products.

3.1.6. EXTENT OF LOCAL CAPACITY, LEVEL OF SOCIAL LEARNING AND KNOWLEDGE MANAGEMENT SYSTEMS AVAILABLE

The areas where Wintergreen and Jatamansi are harvested are remote and local capacity resides in village committees and the Community Forest Users Groups (CFUG). Where CFUGs have received outside

assistance in organization and capacity building, they have become effective conduits for both social learning and knowledge management. In some districts across Nepal, including many where Jatamansi and Wintergreen are harvested, CFUG groups have been federated and linked with FECOFUN, the national level CFUG body. The federating process allows the individual CFUG groups to share knowledge on many aspects of forest management and cooperate in functional areas within the Jatamansi and Wintergreen chains. Two examples cited from interviews noted social learning and effective knowledge management in preparation of operational plans and biological monitoring and cooperating on processing enterprises and market information. While the federations are gaining strength, it was also noted that outside NGO assistance was still required to facilitate learning.

3.1.7. ACCESS TO AND USE OF TECHNICAL ADVISORY AND INTERMEDIARY SERVICES INCLUDING RESEARCH, EXTENSION AND EDUCATION SERVICES

In recent years, access to and use of technical advisory and intermediary services has been hindered due to the peace and order conditions. Extension services, which were sparse before the Moaists, are almost nil in most rural areas now. Even in relatively safe areas such as the Kathmandu Valley, research and support services for the NTFP sector have declined within research institutions. For example, Nepal used to have basic testing facilities with working equipment to run various quality control requirements for herbal products, but now much of the equipment is inoperable and/or trained technicians are no longer employed. The growing capacity among various NGOs and the institution of the NTFP coordination committee within the government is a positive step to better coordinate the government's research, extension and education services in this sector. Still, given the decreased presence of government officials in many rural areas, access to services for the NTFP sector is limited to donor-assisted NGO programs working in cooperation with the Nepali government.

3.2. WEALTH MAPPING

3.2.1. INDUSTRY PROFITS/MARGINS AND DETERMINANTS OF PRICE AMONG VARIOUS ACTORS IN THE CHAIN

Tables 7 and 8 give an overview of the profits/margins among the various actors in the Jatamansi and Wintergreen chains.

Table 7: Estimated profit generated from kg of raw Jatamansi (in Nepali Rupees)

Actor	Selling Price per Kg	Profit per Kg
Harvesters	50	50
Village/District Traders	60	10
Airport Traders	150	21
Urban Wholesalers	200	25

Note: Harvesters provided no input other than time and labor which is not computed in this table.

Table 8: Estimated profit generated from kg of Wintergreen oil (in Nepali Rupees)

Actor	Selling Price per Kg	Profit per Kg
Harvesters	312	312
Local Processors	700	76
District Traders	800-850	80-130
National Traders (domestic sales	950	90
National Traders (export to India)	1,400	340
National Traders (export to U.S. and Europe	1,700	540

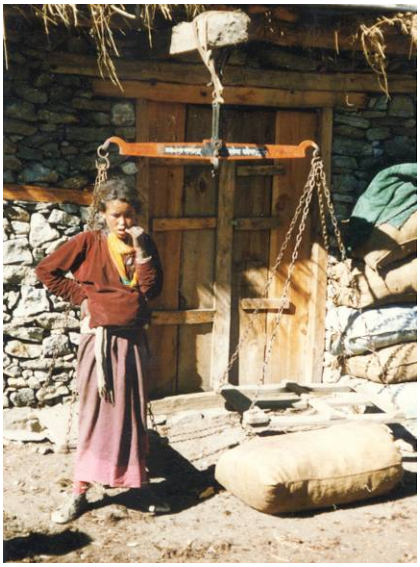
Note: Harvesters provided no input other than time and labor which is not computed in this table.

For harvesters, productivity of a Wintergreen collection trip varies from one community forest to another. Interviews with the harvesters, executive members of CFUGs and local informants indicate that in a 4-6 hour workday, one can collect approximately 60 kg of Wintergreen twigs with fresh leaves. The value of one kg of Wintergreen varies from Rs 1.00 to Rs 1.50. The average annual income from Wintergreen varies from one collector to another depending on the availability of surplus labor and the socioeconomic condition of the collector. Generally, harvesters were able to earn Rs. 1,000-2,000 per month along with their daily work at home. This amount is higher than the local wage labor rate (Rs.50 per day for 8 hours of work in Wintergreen collection districts).

Similarly, a person can collect 100-150 kilograms of Jatamansi in a season. The average annual income from Jatamansi to each collector is in the range of Rs 5,000-7,500. However, the harvesters do not only collect Jatamansi, they also collect other herbal products at the same time. A collector can collect three to five kilograms of Jatamansi in a day, which is worth approximately Rs. 150 to 250 locally. This amount is higher than the local wage labor rate (Rs.100 in Jatamansi collection districts).

Pricing of Jatamansi and Wintergreen is affected by a variety of factors beyond the control of the collectors and local traders (village and district level). The trade is governed by the buyers who dictate prices based on Indian markets and world price levels for a given product. The collectors only have the option of collecting or not collecting. Alternative markets within Nepal for Jatamansi have not developed and overseas markets (beyond India) are difficult to enter. Another important factor in pricing is that no one can assure the price level for the coming year and traders will not fix a price while providing advances. When the products are harvested, the collectors have little option but to sell the products at the trader's offered rate (ANSAB, 1999).

In recent years, the increase in the number of traders and availability of some market information benefited the collectors by providing them more outlets for their products and bargaining power on price. However, when the product reaches Nepalgunj, a small group of traders captures the majority of the products from the Karnali Zone and most from the far-western region as well, and this group controls the market. These traders supply products to Delhi, Kannauj, Kanpur, and Lucknow traders who mostly serve as commission agents for manufacturers and exporters. Manufacturers and exporters in India ultimately have the greatest influence on price fixation for Jatamansi (ANSAB, 1999). Wintergreen pricing is also influenced by a limited number of dominant urban manufacturers/national traders within Nepal. But, here the Wintergreen oil price is actually higher in the domestic market than international markets. This dynamic has made it difficult for Nepal to develop an export market for its Wintergreen oil. The gains on pricing leverage by the harvesters in some cases and the dominance of some of the traders has put the biggest pricing squeeze on the oil distillers. While on average oil distillers margins look good, they carry the highest risk when they must buy up raw material supply at a given price, but may not sell the oil until much later (they need to consolidate supply often) when oil prices may have changed.



NTFP collection and processing, the only industry in the District

3.2.2. LIVELIHOOD ISSUES (PERCENT OF HOUSEHOLD INCOME DERIVED FROM JATAMANSI AND WINTERGREEN)

Collection and trade of NTFPs has played a key role in the economic development of the country, where economic opportunities are severely constrained by difficult socio-economic conditions and poorly developed infrastructure, such as communication and transport facilities (ANSAB, 1999). For most communities, NTFP collection, including Jatamansi and Wintergreen, is one of the few or only ways to earn cash income without engaging in seasonal migration out of the area.

Income from Wintergreen contributes 15-25 percent to the total household income of the harvesters. Income from Jatamansi contributes 20-25 percent to the total annual income of harvesters. Local processors have close to full-time work, operating the Wintergreen and Jatamansi distillation units and this income accounts for 90-100 percent of their annual income. Traders, wholesalers, and urban distillers and manufacturers also derived close to 100 percent of their income from NTFP trade and processing, but the actual percentage attributable to Jatamansi and Wintergreen was not identified.

3.2.3. PROCESSING, STORAGE AND TRANSPORT FUNCTIONS

Table 9 summarizes the processing, storage and transport functions for Jatamansi and Wintergreen.

Table 9: Summary of Functions for Wintergreen and Jatamansi

Function	Who is Responsible	Barriers to Entry	Rents Imposed
Processing	Wintergreen: Local and district level distillers Jatamansi: Local and national level distillers	Working capital to purchase raw material in bulk and hold inventory of finished oils Access to collection permits Access to end buyers	Pay royalties to CFUGs for raw material supplies
Storage	Wintergreen: Not applicable for raw materials, only for oil. Oil storage handled by distillers and national trader and marketing cooperative. Jatamansi: All traders and distillers provide some storage function for raw and processed Jatamansi	Tied to transport and/or processing functions, no separate actors that specialize in storage Most facilities not optimal for proper storage conditions (temperature and hygiene control) which lowers the cost, but also makes if difficult for upgraded storage facilities to compete.	Rental fees for makeshift storage space
Transport	Wintergreen: Transport of raw materials is done by collectors; transport of oil is handled by district level traders Jatamansi: Transport of raw materials is done by village traders (within district) and airport traders (from outside the district).	Regardless of which market actor handles the transport function, all rely on Royal Nepal Airways as the only transport source. Need working capital to prepay transport costs.	Transporter has to be able to show evidence of harvest permits and they often pay taxes and royalties due since collection points are at the airports. The further along the chain the products are traded, the more opportunity for collection of "fees" (e.g. border payments, etc.).

3.2.4. PRODUCT QUALITY (CHANGES ALONG THE COMMODITY CHAIN, KEY CONTROLS, AND BARRIERS TO IMPROVING QUALITY)

RAW MATERIALS (HARVESTING, STORAGE AND TRANSPORT)

For Wintergreen, since it is processed close to the collection site, there was little opportunity for adulteration of the raw material. This is compared to Jatamansi which is often stored for weeks and months and transported over long distances before it is processed. Depending on when the Jatamansi is harvested, excess moisture and dirt can hasten deterioration of the rhizomes. It was also reported that some traders mix in other materials and/or spent Jatamansi rhizomes (the material that has already gone through the distillation process) thus adulterating the pure Jatamansi. The export ban on raw Jatamansi is a barrier to improving quality at this stage, since dishonest traders dominate the purchase of the raw materials and compete against CFUGs that abide by the export ban. CFUGs have been effective in gaining control of the Jatamansi harvesting and initial sales in the domestic markets, but once it moves further down the chain, the collectors and CFUGs are shut out of the international market for raw Jatamansi, since export of the raw rhizomes is illegal.

OIL DISTILLATION AND STORAGE

Both Wintergreen and Jatamansi are processed in small batches. Proper loading of the vessels and temperature control during the distillation of the raw materials is needed to give produce a quality final oil.

Jatamansi, depending on when it is harvested will also yield varying amounts of oil that are subject to color and quality changes. Proper testing of batches and segregation of batches to maintain quality is important, but was not always practiced in the distillation plants and at storage facilities. Cost of multiple storage vessels was noted as a constraint to practicing batch separation.

3.2.5. OPPORTUNITIES AND BARRIERS TO INNOVATION

Ironically, a barrier to innovation is the poor quality of Jatamansi and Wintergreen oil coming from India and China. When Nepal first started to distill Jatamansi oil and offer it to Western buyers, they thought the oil was poor quality since it did not have the color and aroma signature of Jatamansi oil from India. Upon further testing the buyers discovered that this was the first time they had sampled pure Jatamansi oil and the market was so used to the poor adulterated Indian Jatamansi oil that buyers had to be re-educated on the true quality level. Recent tests with Nepali Wintergreen oil are yielding the same findings. The Nepali essential oils are of very high quality, but market prices are based on poorer quality oils. Distinguishing Nepal's essential oils from Indian and Chinese oils is key.

An opportunity for marketing innovation is in certification programs that reward Nepal for its progressive CFUG program and natural, sustainable production systems. The Forest Stewardship Council Sustainable Forestry Certification and Organic Certification are two certification programs which could help distinguish Nepal essential oils.

3.3. POWER MAPPING

Power mapping looks at the formal and informal access and control procedures, their enforcement and impact on the Jatamansi and Wintergreen value chains.

3.3.1. LEGISLATIVE FRAMEWORK

The natural resource management system in Nepal is mainly administered by the Ministry of Forest and Soil Conservation (MFSC). In the late 1980s and early 1990s the government started to hand over some of the marginal forest lands and grass lands to local communities with the aim of conservation of biodiversity, fulfillment of basic needs and poverty alleviation. The Forest Act of 1993 and its subsequent amendments, together with the Forest Regulations of 1995 and the Community Forest Directives of 1995, provide a framework for the ownership/tenure structure of community forests in Nepal. The new forest policy mandates handing over use rights and management responsibilities of all accessible forests to local user groups (Subedi, 1999). This was a major shift away from direct state control. The community forestry directives are more in line with traditional forest management practices. Table 10 summarizes the major milestones impacting resource tenure and forest management systems.

Table 10: Timeline of major milestones influencing forestry governance

Year	Instruments and Actions
1957	Government Nationalized Private Forests
1961	Forest Act, 1961
1967	Forest Protection Act, 1967
1976	National Forestry Plan, 1976
1977	Forest Act of 1961 Amended
1978	Change in Forest Policy from Government Management to Community Ownership
1982	Decentralization Act, 1982
1989	Master Plan for the Forestry Sector, 1989
1990	Term *Panchayat* amended to "Users Groups"
1993	Forest Act, 1993
1995	Forest Regulations, 1995

3.3.2. TRADITIONAL LAWS

With the institution of the CFUG system, CFUGs are becoming stronger to manage local resources. The CFUGs build off of traditional village governing systems and are able to draw up and enforce local harvesting protocols and resource management strategies that are then incorporated into the CFUG operations plan that is backed by the legislative process described above. The government has given full authority to the CFUGs to manage Wintergreen and Jatamansi for income ingeneration.

3.3.3. LEGAL AND EXTRA-LEGAL RULES AND PROCEDURES THAT GOVERN ACCESS

Access and control over resources is the major governance issue, especially for the rural people, and it is the bread and butter issue on which democracy must deliver (IRG 2004). The government of Nepal has tried to impose a number of regulations on the collection, trade, and export of NTFPs. These range from the requirement of getting a collection permit before collection, royalty payments, and outright ban on certain products. While the intention of these regulations may have been well meaning, they have resulted in a distorted environment detrimental to the overall development of the NTFPs from the collector's perspective.

Permits, issued by the DFO specify the quantity to be collected, the duration of collection and exact location from where Jatamansi and other NTFPs are to be collected. There are certain pocket areas and these areas are officially chosen on the basis of traditional practices. Contractors/CFUGs can collect up to five tons of Jatamansi from the given area. If they would like to collect more than five tons they should undertake an Initial Environmental Examination (IEE) of that area. The IEE should be approved by the District Forest Office under the Department of Forests, Ministry of Forests and Soil Conservation. However, no contractor was found meeting the IEE requirement even if he/she collected Jatamansi (or other NTFPs, for that matter) exceeding five tons. Where CFUGs are strong and have been assisted by NGOs, collection and plot allotment is under control and IEE requirements are met. Still there were cases reported where CFUGs had their rights infringed upon, mostly in the case of Jatamansi collection.

Corruption in the Government agencies is a difficult reality for collectors, traders, and processors to overcome. Those with the financial means to address the needs of government officials, police officials, and forestry and customs agencies can profit within the current environment. However, those without the financial means or political/social clout suffer by not being able to collect or trade their products in a legal manner. An example of this can be seen in the trade of Jatamansi root.

Only those with the means of carrying out illegal activities can benefit from the higher price of the raw Jatamansi in India, effectively eliminating collectors or local traders from accessing this market directly. While CFUGs have gained control of most of the supply at the harvesting phase and initial trade or processing step, once the raw Jatamansi continues past the airport traders, a significant portion (about 25 percent) still crosses the Indian border illegally. In addition, the government has stated that they consider oil extraction as the only suitable form of processing for Jatamansi, eliminating the potential to trade the product as an ingredient in tea and other products.

Environmental and procedural rights for rural people have been weakened due to the current political turmoil in the country. For example, for months there have been bans on group meetings and sometimes restrictions on being in the forest which inhibits CFUG community meetings for legitimate purposes, biological monitoring and NTFP collection. Unfortunately, the Maoists are also involved in the value chain of Jatamansi and NTFPs and impose different taxes and levies on the local population in the name of their "new regime".

3.3.4. MECHANISM OF ACCESS CONTROL AND MAINTENANCE

Tables 11 and 12 give an overview of the mechanism that each of the main actors use to maintain and control access to Jatamansi and Wintergreen.

Table 11: Power Mapping of Jatamansi

Market Actors	Access Status	Mechanism for Exercising Access
Local harvesters	Access to forests, direct access to CFUG resources, indirect access to forests, if not part of a CFUG must be affiliated with a contractor who holds a collection permit	DFO approval of operational plans or collection permits, CFUG membership, traditional member of communities, social groups, traditional collection practices, Moaist may collect payments from harvesters
Village traders/agents	Access, trust, relationship with local harvesters, networks, linkage with airport traders, Market information	CFUG membership, relationship with airport traders, having collection license, networking with government, finance to local harvesters
Local distillers	Access to village traders and local harvesters, local networks, access to CFUG resources, access to national and international buyers,	Built on community systems including Village Development Committees, CFUG membership, permission from DFO to distill, employing local community members, provide economic incentives for locals
Airport traders	Access to DFO and local harvesters, linkage with urban wholesalers and urban distillers, access to FNCCI	Hold trade license for NTFPs, financial resources to invest in NTFPs trade, social networking with local harvesters and government
Urban wholesalers (raw)	Access to urban distillers and airport traders, access to national and international buyers, access to FNCCI, access to working capital and trade credit	Good network with custom office and security personnel, access to current market prices of raw NTFPs in national and international markets, know how to smuggle across border (buy in from customs)
Urban distillers, mainly oil distillers	Access to urban wholesalers and exporters, access to regional, national and international market, access to credit and loan, access to labor	Permission certificate of distillation, influence the market price of raw Jatamansi and marc, networking with government officials and security personnel, have rudimentary quality testing equipment for oils
Urban traders, mainly oil exporters	Access to local and urban distillers, access to national and international buyers/importers/exporters	Export license, knowledge of international markets and price variation, skills of value addition
Buyers in India and West	Have market contacts beyond Nepal, have developed secret product formulas that use Jatamansi	Exploit Jatamansi CITES status to negotiate price and gain access to buyers, good ties with Nepali traders and buy a range of NTFPs to retain their patronage
District Forest Office	Holds overall authority to grant access to forests and utilization of forest products	Issues OPs, monitors and supervises implementation of OPs, enforces forest related legislation within the district
Customs officials	N/A	Verify tax payment documents issued by the DFO
Government testing laboratories	N/A	Analyze and certify authenticity, genuineness and quality of forest products

Source: Field survey 2005.

Table 12: Power Mapping of Wintergreen

Market Actors	Access Status	Mechanism of Exercising Access
Local harvesters	Access to forests Direct access to CFUG resources	CFUG membership Local inhabitants
Community Forest User Groups	Access to local harvesters, traders, market information and various supporting organizations	CFUG membership Ownership and management rights of community forest Networking with different governmental and non governmental organizations
Primary Processor	Access to harvesters and CFUGs Access to district level traders Local social and economic network Access to market information and other supporting organizations	Good relationship with the harvesters CFUGs, Employment opportunities for local community members, Provide economic opportunities for locals

Market Actors	Access Status	Mechanism of Exercising Access
District level traders	Access to processors, domestic manufacturers and national traders	Good relationship with primary processors, DFO, FECOFUN Social and economic networking with primary processors
Cooperative Enterprises	Access to CFUGs, domestic manufacturers and national traders Access to market information and supporting organization	Good relationship with CFUGs, FECOFUN and supporting organization. Support from local community
Nepali Manufacturers	Access to district level traders Access to international market on minimal scale Access to national trader Access to people on behalf of their final product Knowledge on market information	Production popularity in national and international market Good network with district and national traders Good network with custom international markets Popularity of the product
National Traders	Access to Nepali manufacturers, district level traders and international market Access to market information	Network with international and Nepali manufacturers Quantity of purchasing assurances to cooperatives, district level traders and primary processors Network with international market
District Forest Office	Holds overall authority to grant access to forests and utilization of forest products	Issues OPs, monitors and supervises implementation of OPs, enforces forest related legislation within the district. Viewed as positive on community forestry but lacking or restrictive for NTFP commercialization.
Customs officials	N/A	Verify tax payment documents issued by the DFO
Government testing laboratories	N/A	Analyze and certify authenticity, genuineness and quality of forest products

Source: FRAME Study Field survey 2005.

3.3.5. NATURE OF INSTITUTIONS – REPRESENTATION BY WOMEN, MARGINALIZED GROUPS.

The dominate institution at the community level is the CFUG. There is a wide range of CFUG organizational development, but again where NGOs have assisted, representation of women and marginalized groups is good. Even within the village there are elites (often local merchants, traders, and school teachers) and they often provide financing and trade consolidation services. Traders outside the communities are dominated by Muslims and the Terai merchant caste groups, as are the urban trading and distillation firms. The number of people of hill origin in the urban-based functions was nominal.

3.3.6. WHO MAKES, IMPLEMENTS AND ENFORCES THE RULES?

While the government makes the rules, implementation of the rules is a joint effort of the Distrcit Forest Office, communities and NGOs, while enforcement in practice relies on the communities. The government policy on forestry has enabled expansion of community forests across the country and devolved forest management rights and responsibilities to local community organizations (CFUGs). The community forestry program has significantly contributed to empowering the local people and ensuring sustainable utilization and management of locally occurring natural resources. It has been one of the most successful approaches in the forestry sector (Shrestha and Sharma 2004) in which the government transfers the responsibility of managing forests to the communities and recognizes the latter's right to use on a sustainable basis. Various writers have noted its achievements in terms of better forest condition, social mobilization, income generation for rural development, and institution building at the grass-root level ((Kanel 2004; Luintel, et. al, 2004; Shrestha and Sharma 2004).

3.3.7. LEGITIMACY OF THE POWER OF RULE-MAKERS

Government policy with regard to NTFPs is not, however, perceived to be in favor of local communities in the same way as in the case of community forestry. It mainly tilts toward regulatory control in the name of maintaining ecological balance, though the local perception is that the government is interested mainly in the royalty payment for revenue sake. As such, it has contributed little to solving problems affecting the NTFP sub-sector in economic and social terms, and has often invited confrontation between the local people and the government. Luintel, et. al (2004) argues that such policies nurture a vicious circle of poverty.

3.3.8. POSITIVE AND NEGATIVE SANCTIONS THAT ARE USED TO ENFORCE RULES

Community Forest User Groups (CFUGs) that have good functioning governing structures put in place CFUG enforced negative sanctions (fines, restricted access to resources, etc.) to regulate their members. A form of positive sanctions used to enforce rules is the ability of CFUGs to collect forest royalties directly if they formulate an effective operational plan and operate NTFP enterprises per the rules.

4. POLICY AND MACROECONOMIC CONTEXT

4.1. ROLE OF TAXES AND TARIFFS

Traders pay formal and informal (bribes or "unseen" expenses) taxes. The district level traders have to pay bribes at each security checkpoint. The arbitrary royalty rates for NTFPs and absence of a well-developed system of determining royalty increases business costs of the district level traders. Contradictions were observed between the Forest Act and the Local Self-Governance Act regarding control over resources. In some cases collection permits of Jatamansi were issued from the government, as well as the Maoists. Maoists were found extorting money from collectors without considering sustainability of the resources. Table 13 summarizes the formal and informal taxes and tariffs for Jatamansi.

Table 13: Formal and Informal Taxes for Jatamansi

Type of Tax	Amount	Formal or Informal	Collected From
Maoist Levy	Rs. 2 per kg	Informal	Harvesters
District Forestry Office Royalty	Rs 15 per kg	Formal	Traders
License Fee from Government	Varies	Formal	Traders
District Development Committee Tax and Local Checkpoints	Rs 6 per kg	Formal and informal at checkpoints	District Traders
Collection Permit Deposit Fee	10% of total collection value	Formal	Traders
"Unseen"* Nepalgunj Payment to Local Officials	Rs. 3 per kg	Informal	Airport Traders
Border "Unseen" Charges Paid to Border Guards	Varies, but average Rs. 5 per kg	Informal	Traders

*"Unseen" is the local term for bribes and payoff money.

A similar situation does not exist for Wintergreen since the processors pay royalties to the CFUGs and obtain clearance papers more easily. There are no other taxes and tariffs paid on Wintergreen aside from the royalty payment to the CFUGs. Also, there is no incidence of illegal trading in the case of Wintergreen.

4.2. EXPORT BANS, PRODUCTION CONSTRAINTS (QUOTAS AND PERMITS), RESOURCE EXTRACTION BANS

There are nine NTFPs, including Jatamansi, that are either banned or restricted for collection and export from Nepal. Jatamansi is banned for export in crude form. In practice, however, this product is still illegally exported to India in significant quantities, although the amount has decreased in recent years. Export bans in general for NTFPs in Nepal have expanded the opportunity for corruption among the government officials who are appointed to check banned and restricted items at various check posts (ANSAB, 1999).

Almost 100 percent of raw Wintergreen is processed in Nepal. There are no export bans on Wintergreen oil nor production and resource extraction issues like those encountered by Jatamansi harvesters. For Jatamansi and Wintergreen quotas and permits come under CFUG operational plans that are approved by the DFO. The DFO can also issue collection permits to private entities.

4.3. INVESTMENT PLANS FOR THE AROMATIC PLANTS AND ESSENTIAL OILS SECTOR OR LACK THEREOF

Government policies and plans acknowledge the importance of processing and manufacturing of herbs and medicinal plants for trade. However, at the implementation level the government only provides a lukewarm support for enterprises and industries based on NTFPs. Bureaucratic and legal processes and present political turmoil discourage the private sector to invest money in the NTFP sub-sector.

NTFPs business is one of the major programs proposed in the Master Plan for the Forestry Sector of Nepal, yet there is still no overall investment plan for NTFPs in Nepal, nor are there targeted lending programs from the major financial institutions.

4.4. INTEREST IN ESSENTIAL OILS BY OTHER DONORS AND THE PRIVATE SECTOR IN GENERAL

A large number of NGOs, INGOs, FECOFUN, CFUGs, co-operatives and few private sector entities are actively working in the field of NTFP enterprises and biodiversity conservation in the mountain, hill and Terai regions of the country. ICIMOD and USAID are the pioneering institutions working in the field of biodiversity conservation in Nepal. USAID aims at supporting and building grass-roots democracy and improving human rights at the CFUG level, which can be considered as the 'primary school' to practice democracy and governance (Sharma and Acharya, 2004). Most of the INGOs working in NTFP enterprises are involved in conducting training and studies, facilitating CFUGs for the preparation of operational plans, awareness raising for conservation, and market networks. Some of the donor-supported projects, such as USAID's Business Development Services (BDS-MAPs) are basically concerned about marketing, production, and delivery of services for NTFP-based and spice industries and their development in Nepal. SNV/Nepal has also supported local communities for the promotion of NTFPs in the Karnali Zone. Table 14 provides an overview of activities that the organizations who attended the FRAME workshop in December, 2005 offer in the NTFP/natural products sector.

Table 14: Natural Products Interest and Activities by Organization

Organizations	Key Activities
Asia Network for Sustainable Agriculture and Bioresources (ANSAB)	• Regular sharing in Nepal NTFPs Network (NNN) • MIS services • Guidelines on sustainable harvesting • Coordination to promote NTFP sub-sector • Active member in national Herbs and NTFPs Coordination Committee (HNCC)/MFSC
Netherlands Development Organization (SNV)	• Sub-sector development • Strengthening market linkages in respect to certification • Guidelines for NTFP enterprise development (for Terai) • Capacity building of district agencies with the aim of developing NTFP management plan at district level • Capacity building of partners
Herbs and NTFPs Coordination Committee (HNCC)	• 30 priority plants for cultivation and research • Coordination among stakeholders • Reviewing royalty • Lobbying for policy improvement
Federation of Community Forestry Users, Nepal (FECOFUN)	• Domestication and governance work on NTFPs • FUG operational plan revisions, including NTFPs • NTFPs nursery and extension materials • Capacity building of local FUGs and monitoring work

Organizations	Key Activities
Himali Jadibuti Sarokar Samuha (HJSS)	• Policy advocacy • Policy awareness campaigns in 10 districts • Stakeholder workshops at district levels
Natioanl Forest Association (NFA)	• Working on concept development of national certification standards • Interaction forums • Consultancy services
Sustainable Bio Trade Group/ Himalayan Bio Trade Limited (SBTG/HBTL)	• Implementing Chain of Custody certification • Documentation systems • Training provided to members • Hand made papers and essential oils • Action research on product development
Lotus Opportunities (LO)	• Activities of a private company • Studies and training on value chain • Market linkages • Project implementation • Access to finance • Open to collaborate
International Centre for Integrated Mountain Development (ICIMOD)	• Streamlining supply chain • Organic cultivation • Certification training • Publications • Lobby for policy development • Jatamansi research work

With a few exceptions, the NGOs are mostly involved in social/policy/organizational development and conservation areas rather than in enterprise development and market access planning. Amongst the private sector, Gorkha Ayurved Company, Singha Darbar Baidhyakhana, Herbs Production and Processing Co., and Dabur Nepal process and manufacture a number of cosmetic and medicinal products that are sold in the national as well as international markets. These firms are also encouraging collectors and cultivators by giving financial support in advance.

The NTFP Public Private Alliance has been implementing programs aimed at raising awareness among different stakeholders such as FECOFUN, CFUGs and DFO about the importance of and processes involved in forest certification. This program has started producing positive results as there are now 21 CFUGs and 8 Nepali companies with Forest Stewardship Council (FSC) certification for a range of NTFPs including Jatamansi and Wintergreen.

5. DEVELOPING AN INTERVENTION STRATEGY FOR JATAMANSI AND WINTERGREEN

5.1. IDENTIFYING COMPETITIVE ADVANTAGE

5.1.1. KEY END MARKET DEMAND CHARACTERISTICS

There is growing demand for essential oils in all market segments – Nepal, India, and other foreign markets. But, until recently most essential oils, including Jatamansi and Wintergreen were treated as commodities and price competitiveness was the primary selling point. The Nepali produced Jatamansi and Wintergreen oil is considered to be of the highest quality in the world. While there is starting to be market segmentation that seeks out the higher quality and certified oils for Jatamansi, the same market dynamic has yet to emerge for Wintergreen.

For Jatamansi, the presence of principal and active ingredients is the most important quality requirement. Normally, importing companies ask for a representative sample of 500 to 1,000 grams, from the same batch. They do their own testing and if the supplied sample meets the requirement, they may place an order. Nepal does not currently have domestic capacity to do their own testing and therefore has to rely on the buyer's assessment of the oils.

Wintergreen oil of much lower quality from China sells for a fraction of the Nepal price. Bulk international users of Wintergreen oil buy almost exclusively on price and do not need the highest quality oil produced by Nepal. Nepal's higher cost structure, and hence price, is due to the scale of operation, technological advancement, market integration and overall industry experience. For this reason, almost all Nepali Wintergreen oil is sold on the domestic market, where a higher price is paid.

Finally, the market for raw Jatamansi needs to be recognized. While some buyers merely distill the rhizomes into oil, a value-added step that Nepal can do, other buyers are interested in Jatamansi for tea, incense and blended perfumes. Some perfumers, especially those going into Muslim markets, distill a blend of raw materials together to produce their signature perfumes. This market requires raw Jatamansi and not oil.

5.1.2. WAYS ENTERPRISE CAN TAKE OWNERSHIP OF A PRODUCT'S UNIQUE DEMAND CHARACTERISTICS

The concept of a 'unique selling proposition' could be developed labeling essential oil products as 'natural', 'sustainable,' and 'organically grown' in the sense that few competitors from other countries possess these qualities. In early 2005, select CFUGs that harvest and distill Jatamansi and Wintergreen received Forest Stewardship Council (FSC) Certification for sustainable forest management and are now in the final stages of securing organic certification. This will be the first time that FSC-certified essential oils are available to the market. For Jatamansi this is significant as it is on List 2 of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). One reputable distributor in the United Kingdom has already completed the FSC chain of custody certification so it can purchase and present the Nepali FSC oils at trade shows to tap this unique marketing niche. The distributor already indicated that having certified oils that meet CITES List 2 requirements for sale will be a selling point.

For Nepal to break out of its reliance on lower-priced Indian markets that do not segment the product based on quality and environmental and social attributes, positioning their essential oils with buyers that are promoting these unique characteristics will be key.

5.1.3. MARKET STRATEGIES FOR ACCESSING NEW REGIONAL AND INTERNATIONAL MARKETS

Better coordination among Nepali actors (government, private industry, parastatals, and NGOs) in international trade shows is needed to promote the unique selling points of Nepal's natural products in a uniform way. Promotion and explanation of the certified products (FSC and organic) and uniform product quality standards would provide access to regional and international markets. Since there are not that many Nepali representatives attending the major trade shows, the buyers are apt to group all the Nepali entities together. This has its pros and cons. In the past, poor business practices of a single Nepali reflected badly on the rest of the industry. It is in the Nepali's interests to work together to promote a uniform image to access the regional and international markets.

5.1.4. STRATEGIES FOR CHANGING ANY NEGATIVE OR LIMITING PERCEPTIONS THAT REGIONAL AND/OR INTERNATIONAL MARKET ACTORS MAY HARBOR

The Nepalis need to deliver a quality product, on time and based on agreed upon buying terms. Indian traders have a greater reputation for product adulteration and/or bait and switch tactics (provide a high quality sample, then deliver a lower quality product). Nepal needs to make sure that they distance themselves from these negative practices and work within their own industry groups to police members. Nepali enterprises also need to be careful not to offer products that they cannot deliver. For example, one buyer, upon receiving samples of an essential oil, promoted it at major European trade shows, only to find out that no significant supply was available to order until the next harvesting season that was months away. In the words of the buyer "one of the worst things you can do to a potential customer is get them all excited about the product, only to tell them they cannot not have the wonderful essential oil."

> "One of the worst things you can do to a potential customer is get them all excited about the product, only to tell them they cannot have the wonderful essential oil."
>
> *European Essential Oils Distributor*

Production projection charts and better coordination with the supplying CFUGs is recommended to be able to provide accurate information to buyers on projected product availability.

5.2. COMMERCIALLY UPGRADING THE INDUSTRY TO REALIZE COMPETITIVE ADVANTAGE

Given the remoteness of where Jatamansi and Wintergreen are harvested, local organizational skills, knowledge on best harvesting techniques to maintain NTFP stands and the ability to enter into value adding activities (i.e. distillation) are needed to reduce transport, storage and multiple trader costs. For Wintergreen this has been done, but given the scale of operations, Nepali Wintergreen oil is still not competitive on the world market.

Emphasis on quality control throughout the essential oil value chain and mechanisms to check and verify quality (sealing products at harvest point and checking for seal breaks along the chain to monitor for adulteration; certification programs; local testing facilities; uniform storage and packaging, etc.) are recommended to commercially upgrade the Nepali essential oil industry so they can take advantage of the more unique aromatic plants found in their country as well as differentiate their higher quality oils vis-à-vis competing products. Nepal has demonstrated they can produce the highest quality oils, but the consistency of the quality needs to be addressed.

5.2.1. ENABLING ENVIRONMENT

Table 15 gives an overview of the range of organizations that make up the enabling environment for enterprise activities in the NTFP sector of Nepal.

Table 15: Summary of Organizations that Make Up the Enabling Environment in Regulatory and Supportive Functions in NTFPs

Enterprise Function/Activity	Organizations
Company registration	Office of Company Registrar, Department of Cottage and Small Industries, Department of Commerce
Collection permit/license	DFO and CFUG
Royalty payment	DFO, CFUGs
Checking and verification of quantity	DFO, Range Post or CFUG
Release order or transit permit	DFO, CFUGs
Local taxes	District Development Committee, Municipality
Checking and endorsement	Forest Check-post
Export recommendation	DFO (recommends the concern to the Customs Office)
Product verification and export permission for selected natural products	Department of Plant Resources (DPR) (Permission to export processed natural products that are prohibited from export in crude form.)
Certificate of origin	Federation of Nepalese Chambers of Commerce and Industry (FNCCI), Nepal Chamber of Commerce (NCC)
Export permission and duty	Customs Office of exporting country
Import permission and duty	Customs Office of importing country
Taxes	Department of VAT, Department of Income Taxes, Department of Customs
Market information	Trade Promotion Center (TPC), FNCCI, NCC, NGOs
Financial support	Agriculture Development Bank, commercial banks
Processing technology	Department of Industries, Department of Cottage and Small Industries, Private companies, NGOs
Resource management and research	DPR, DFO, CFUGs, NGOs

Source: Subedi (2004).

5.2.1.1. CONSTRAINTS AND OPPORTUNITIES RELATED TO THE LOCAL ENABLING ENVIRONMENT

Having so many institutions involved in NTFPs has its pros and cons. On the positive side the necessary support functions are represented in the range of organizations but coordination and delivery of services has been lacking. The establishment of the NTFP Coordination Committee is working to address this, but is only a bit over a year old. Reducing the number of government bodies that must interact with the product would reduce transaction costs for the industry. An idea from the Philipppines FRAME study work that may be worth exploring in Nepal, is "one stop check point." This is where all the government bodies that must collect fees and/or issue permits/clearances reside in one location and the enterprise pays one fee and gets all necessary paperwork accomplished in one transaction.

5.2.1.2. ACTIVITIES THAT REDUCE THE EFFECTS OF POOR OR CORRUPT LOCAL ENFORCEMENT PRACTICES INCLUDING ADVOCACY, COST ANALYSES, AND PRIVATE SECTOR SERVICES

The activities that had the greatest impact in reducing the effects of poor or corrupt local enforcement are: 1) organization and strengthening of local CFUGs; 2) establishment of local processing facilities to shorten the raw material supply chain and reduce opportunities to extract funds from raw materials trade; and 3) organization of the CFUGs, industry groups, and NGOs to lobby the government on needed policy changes in NTFP royalty payments and collection practices.

5.2.1.3. ACTIVITIES TO IMPROVE ENABLING ENVIRONMENT INCLUDING INCENTIVES FOR TRANSPARENT BUSINESS PRACTICES AND TO REDUCE INFORMALITY REDUCTION

To improve the enabling environment, the illegal trade in Jatamansi needs to be addressed, there needs to be more transparent market information provided throughout the chain, and royalty rates for NTFPs need to be based on scientific and market conditions.

The government could offer royalty reduction or access to finance as a way to encourage more processing of Jatamansi and reduce the illegal export of raw materials. The amount of raw Jatamansi exports has been decreasing due to increased processing. This also reduces the informality and when processing is done near the collection areas more transparent business practices between the harvesters and buyers is possible. But, processing units have also closed or have challenging cash flow problems. Some preferred industry support from the government could go a long way in preserving the good trend toward additional value added for Jatamansi and allow other essential oils to follow the model.

Lack of market information on demand, prices, and buyers is seen as another constraint to the promotion of essential oil business in Nepal. For local people as well as CFUGs, lack of knowledge in product diversification is another constraint. Market information programs that have been done in select parts of the country need to be investigated more closely and scaled up to reach more actors within the chain.

5.2.1.4. ACTIVITIES THAT COUNTER THE EFFECTS OF SUPPORTING MARKET POLICIES

The finance community within Nepal needs more exposure to and information on natural products investment opportunities. There is an education component that could help spur investment, but it needs to be coupled with capacity building at the harvest and processing level. The successful district level processing enterprises that have been established have proven most influential in countering the effects of policies that weaken key supporting markets. More effort is needed in this area.

5.2.1.5. ACTIVITIES THAT SUPPORT A MORE FAVORABLE INTERNATIONAL ENABLING ENVIRONMENT

A more favorable international enabling environment depends on Nepal taking long-term measures to meet international market quality and importation standards. There are certain prerequisites to be met before Nepal can access and benefit from international markets for NTFPs. Foreign buyers apply stringent product quality and process related standards requiring sophisticated analytical capacity and institutional support. A recent study on Implications of the WTO Membership on the Nepalese Agriculture (Sharma and Karkee (2004) in FAO/UNDP/MOAC (2004)) indicates the level of changes needed (see box).

NEPAL AND ACCESSING INTERNATIONAL MARKETS

Lack of comprehensive policies on standards which result in ambiguous enforcement by various agencies; lack of preventive and proactive measures in safety management; inadequate consideration to horizontal standards such as limits for pesticides, heavy metals, mycotoxins, and food additives; lack of good practices in production, processing, and marketing; poor state of laboratory equipment; weak export inspection agency for inspection and certification of export products; lack of coherence between various laws; poor coordination among the law enforcing agencies; and inadequate … capacity for equivalency, and mutual recognition agreements.

Many of the WTO concerns equally apply to NTFPs. Indeed, properly addressing these issues and constraints would require actions across a whole range of intervention areas, including policy reform, setting national standards consistent with those applicable in NTFP importing countries, promotion and mandatory implementation of good practices and processes, establishment and capacity enhancement of laboratories, export inspection and certification, legislative reforms, and improved coordination among the concerned regulatory authorities and other stakeholders.

Many international agencies in Nepal are focusing on high valued NTFP promotion, extensively consulting with high-level government authorities, development experts and grassroots level beneficiaries. This will further open the market for essential oil products in Nepal.

An intermediary step, which gave positive indications that Nepal could meet international standards was the pilot program on Forest Stewardship Council (FSC) Certification and International Organic Certification. Supported by USAID, local NGOs, industry, community forest groups, the government and FECOFUN, representatives went through an extensive certification process which required upgrading data collection; ensuring transparent and equitable business practices; instituting forest governing protocols; establishing monitoring, record keeping, product tracking; and upgrading management skills. The participants passed the stringent certification requirements and in the process strengthened select supporting structure for the target products (including Jatamansi and Wintergreen) in the pilot areas. The government

representative participating in this process is looking at ways the experience can be scaled up and lessons applied to promote a more favorable international enabling environment where buyers will have high respect for Nepal products and the confidence that the products meet international standards.

5.2.2. VERTICAL LINKAGES

5.2.2.1. CONSTRAINTS AND OPPORTUNITIES RELATED TO VERTICAL INTER-FIRM COOPERATION

It is very important to link processing and marketing enterprises with well managed CFUGs to generate sufficient economic incentives and promote biodiversity conservation. Constraints to greater inter-firm vertical cooperation include lack of capacity to increase CFUG management skills, uncertain essential oil processing capacity (firms open and close with working capital and marketing constraints) and lack of established market channels beyond India with known quantity and price structures.

Opportunities exist to improve vertical coordination from markets to processors to harvesters, so that supply and demand levels are better known vertically within the chain. During the study, several difficulties were cited in supplying the market requirements – inconsistent quality, fluctuations in production quantities, and lack of quality checking facilities. Understanding harvesting schedules is key to better vertical inter-firm cooperation. For example, buyers need to understand that there are harvest seasons for the products and oil orders need to be made known to harvesters and processors so they can prepare to fill the order. In lean times, if oil orders are not in hand, then processors may close and harvesters sell off raw Jatamansi to traders. Even for Wintergreen, under-harvesting was observed due to the presence of insufficient processing units, insufficient market demand, competition with Chinese products, and insurgency.

Wintergreen estimated sustainable harvest levels show that at least six distillation units can be managed in a sustainable manner in Dolakha district alone. Informants also mentioned that there are some potential areas for the establishment of distillation units in Sindhupalchowk district. It is recommended that there be increased vertical integration with Nepali domestic manufacturers to grow the market for local Wintergreen oil.

5.2.2.2. WAYS TO PROVIDE NEW INFORMATION, SKILLS AND KNOW-HOW TO ENTERPRISES

Study participants suggested three major ways in which new information, skills and know-how could be provided to enterprises.

- **Create working groups within existing networks** for the introduction of new technology, certification information enterprise management skills and knowledge;
- **Develop functional links between enterprise development and conservation** and share tools for community based biological monitoring and sustainable harvest protocols (rotational harvesting, optimal season to harvest and methods, etc) more widely throughout Nepal (see text box).
- **Make the government's main role service delivery rather than imposing restrictions.** For example, Mr. Parbat Gurung a Trader in Dolakha said "Supporting organizations should give training for the collectors regarding cutting methods to ensure regeneration and sustainable harvesting at the field level. We are expecting this kind of help from District Forestry Office and other supporting organizations"

INFORMATION DELIVERY THROUGH CFUGS

CFUGs play a valuable role in making their members aware of the prices of NTFPs in local, regional and international markets. The district chapter of FECOFUN at Jumla publishes monthly pricelists of NTFPs provided by ANSAB and circulates these among the harvesters, traders and other stakeholders. This practice has increased the bargaining capacity of the individual harvesters of NTFPs. Also, through the CFUGs, resource management, sustainable harvesting practices, and biological monitoring have been introduced and are being adopted among harvesters.

5.2.2.3. WAYS TO ORGANIZE ENTERPRISE TO LIMIT THE EFFECTS OF HIGH TRANSACTION COSTS, AND LACK OF CAPACITY TO ACHIEVE ECONOMIES OF SCALE

Processing close to the harvesting areas would reduce high transport, storage, and multiple trade costs that increase the cost structure for Jatamansi and limit the amount of Wintergreen processed. Study participants noted the monopolistic behavior of one or two large urban processors kept the local price for Wintergreen high and in turn discouraged local manufacturing expansion of products with Wintergreen as a component. Since the local manufacturers are the main buyers for Nepal, Wintergreen oil, artificially constraining their demand, ends up constricting the entire sector. On the production side, the price of Wintergreen oil paid by HPPCL, the main buyer, has not increased for the suppliers for the last three years, while the manufacturers complain they pay a higher price than what they can get from locally run distillation units.

The number of processing and manufacturing enterprises is small in Nepal. It was frequently reported that there is high demand for herbal products in Europe, but Nepali exporters could not supply the required quantities. This resulted in the European and American traders turning to India and China where they could obtain the required quantity. Thus, the major markets for Nepali essential oils are different parts of India, which later sell to Europe and America as Indian products. Support to decentralized processing enterprises, to coordinate on production, quality standards and completing larger orders would help Nepal to achieve economies of scale and reach new markets. Coordination among processors could allow for bulk purchase of appropriate oil containers (which can be costly as they are imported items to Nepal) as well as bulk shipping of oils which brings down the per kilo shipping rate.

STRATEGY FOR PROMOTING ECONOMIES OF SCALE

"There are some potential areas for the establishment of distillation units in other parts of the district. Raw Wintergreen is difficult to transport far from villages. Even if it is transported, it is not economically viable. Distillation units should be established by estimating the physical flow of Wintergreen, economic viability and willingness to cooperate by the local people. We are always ready to help the CFUGs to move to enterprise direction." Mr. Harihar Neupane, FECOFUN, Dolakha

5.2.3. HORIZONTAL LINKAGES

5.2.3.1. CONSTRAINTS AND OPPORTUNITIES RELATED TO HORIZONTAL INTER-FIRM COOPERATION

Constraints in organizing the horizontal inter-firm cooperation at the harvesters and processors levels are hindering the essential oil sector in Nepal. The Government has not clearly spelled out the scope and opportunities for NTFP management within community forests (Subedi, 2004). Development of NTFP-based enterprises at the local level requires a complicated procedure. According to government rules, forest-based enterprises, including NTFPs, could not be established within three km in the hills and five km in the Terai from the forest. For example, if CFUGs or other local co-operatives want to establish and operate such enterprises, this distance limit becomes a major constraint; consensus is required, as well, for enterprise registration among three parties (DFO, Land Survey, and Cottage and Small Industry Authority). This is one of the major bottlenecks in the promotion of enterprise-oriented resource management (Subedi 2004). Similarly, the government is suffering from limited technical capacity in supporting NTFP management and enterprise development. Without known raw material supplies, expansion in processing capacity is hindered.

There is the opportunity to address this constraint through a management information system (MIS), developed together with the stakeholders to promote opportunities for a range of NTFPs that could be processed by the same distillation unit. For example, an enterprise processing several aromatic plants, in addition to Jatamansi, could be located at one processing unit.

5.2.3.2. WAYS TO SHARE MARKET INFORMATION, REDUCE UNIT COSTS AND TRANSACTION COSTS

As a first step towards increasing overall production, local level case studies should investigate ways to increase production within the trade catchment areas. This may be achieved by strong coordination among CFUGs, VDCs, NGOs, DFO, DDC, cooperatives and business enterprises. Promoting trade catchment areas has the promise of reducing transaction costs and can be a targeted way to share market information thorugh local media (Community Radio-FM, Radio, TV and newspaper).

5.2.3.3. WAYS TO ALLOW ENTERPRISES TO ESTABLISH A MORE MUTUALLY DEPENDENT RELATIONSHIP WITH LEAD FIRMS AND BUYERS

Nepal needs to develop its identity with large lead firms outside of Nepal. This will depend on firms within Nepal cooperating to fill larger orders needed by the lead firms at the quality levels specified and in a timely manner. India has established relationships with lead firms because they consolidate supplies of Jatamansi oil and other NTFP products from various areas of Nepal. Nepal needs to aim to take over this function that India performs for Nepali oils. Offering a range of essential oils in significant quantities will establish more mutually dependent relationships with lead firms and buyers beyond India.

5.2.4. SUPPORTING MARKETS FOR PRODUCTS AND SERVICES

Supporting markets for products and services that could improve the NTFP value chain are sorely lacking in Nepal. Facilities are needed at airports for product storage, quality control testing facilities are non-existent or no longer have functioning equipment and trained personnel to carry out required tests, and financing options beyond what traders offer are scarce. Himalyan Bio Trade Ltd. is an exception, in that it provides product consolidation, storage and marketing functions to processing enterprises located in the mountains. Other supporting products and services have tended to be NGO and project-based. More needs to be done to cultivate additional value chain actors that can provide the lacking products and services.

5.2.4.1. CONSTRAINTS AND OPPORTUNITIES RELATED TO THE FINANCIAL SERVICES

Although some processing units are established in various districts initiated by the private sector in the past few years, they have not been able to run at their full capacity. Due to the present political situation and security problems, capital required to run such enterprises is not easily available. Financial constraints have crucially hampered investment in NTFPs. The commercial banks hesitate to invest their money due to uncertainty of return, given the security risks. There is an opportunity for the government to step in and offer some form of political risk insurance so that NTFP processing enterprises can access necessary working capital. If the government develops a clear, transparent, and effective policy, local people have proven they can handle and manage processing units on their own.

5.2.4.2. WAYS TO DELIVER VIABLE FINANCIAL SERVICES

The commercial banks in urban areas and cooperatives in the rural areas could be viable institutions for the investment in the NTFPs trade. The commercial banks have limited areas for investment in Nepal, which to date have not included NTFPs in any significant way. The perceived political risks due to the Maoist insurgency hamper investment by urban lenders who are not comfortable with the unknown risks of rural enterprises. Rural cooperatives have saved and invested in some NTFP enterprises, but this source of financing does not go far enough. It is suggested that a financing forum be organized to bring bank officials, government, and NTFP enterprise operators together to explore how a targeted investment program for NTFPs might be developed.

5.2.4.3. MARKETING (INCLUDING PACKAGING, ADVERTISING, CERTIFICATION, ETC.)

Jatamansi and Wintergreen essential oils and bulk raw materials are sold in rudimentary packaging. The existing packaging system for most NTFPs is very primitive and commonly is packed in jute sacks without compressing. Oils should be stored in appropriate containers in a cool, dark, dry location. Storage facilities should be developed in certain market centers. Workshop attendees also recommended investigating ways to compress the commodities before transporting to reduce space during storage and transport.

As most of the essential oils are sold to manufacturers, the packaging needs to be technically correct to preserve the quality of the oil and accompanying literature should provide accurate product information and a professional image of the supplying company. Retail level packaging is not required for Jatamansi and Wintergreen oil.

Advertising needs to be targeted with consistent themes from the Nepali suppliers to build a positive Nepali image in overseas markets. Distinguishing Nepali products from Indian and Chinese products is being attempted with certification programs.

Nepal is the first country in the world to be able to offer FSC certified essential oils. These oils were first offered at the Natural Products Expo in the US in 2005 and the initial response was positive. FSC certification combines fair trade principals with environmental sustainability principles giving buyers two unique angles to promote with customers. It remains to be seen if the certification strategy will work to distinguish Nepali oils in the market and give Nepal the "unique selling" angle they need to compete with lower cost Chinese and Indian oils.

5.2.5. ENSURING THE SUSTAINABILITY OF COMPETITIVENESS

5.2.5.1. WAYS TO FOSTER MORE TRANSPARENT, LONGER-TERM AND FOCUSED RELATIONSHIPS

There is an opportunity with the new NTFP policy to foster more transparent, longer-term and focused relationships, but it will be up to representatives within the sector, including key NGOs to advocate for the new policy to achieve its intended objectives. The new policy on herbs and other NTFPs was approved by the government in August 2004 with the following objectives:

- Encourage sustainable production, collection, processing and management of NTFPs for maximum economic and environmental benefits;
- Promote commercial production of NTFP species through ex-situ conservation;
- Enhance participation of the private sector, local bodies and others in primary level processing of NTFPs at the local level with a view to raising income and employment in remote and inaccessible rural areas;
- Promote commercial competitiveness of NTFPs by providing and developing capital, infrastructure, technical know-how, skills and marketing in order to reduce poverty of local people;
- Ensure participation of socially deprived people and women in the collection, processing, production and marketing of NTFPs; and
- Promote competitiveness and marketing of NTFPs in international markets.

The policy seeks to improve management of NTFPs by promoting good harvesting practices, in-situ and ex-situ conservation of endangered NTFPs, designation of specific potential areas as "NTFP areas," and creation of favorable environments for maximally benefiting local people. The new policy promises to prepare and implement separate short-term and long-term master plans for the overall development of NTFPs.

The key features of the policy include: (i) conservation and proper utilization based on sustainable development, (ii) people's participation, certification, simplification of the tax system, ensuring due benefits of appropriate technologies to the people, and awareness raising and provision of support for skill enhancement and commercialization. Since 2004, progress has been made on certification, increased people's participation, and consideration of various royalties for specific NTFPs. Much still is needed. One recommendation is that a priority setting exercise be completed to generate more targeted short-term and long-term activities that match up with the well-stated objectives.

5.2.6. LEARNING AND INNOVATION

5.2.6.1. WAYS TO INSTITUTIONALIZE LEARNING MECHANISMS

Several active and successful bodies that focus on NTFPs and natural products exist in Nepal. These include the Nepal NTFP Network (NNN), HJSS, and the NTFP Coordinating Committee. These bodies have worked to institutionalize learning for the multiple actors in the essential oils sector and it is suggested that further support be given to these bodies to expand the range of learning mechanisms they offer and the scope of participants.

5.2.7. BENEFITS AND SUMMARY

5.2.7.1. WAYS TO ENHANCE THE BREADTH AND DEPTH OF BENEFITS

In summary, Jatamansi and Wintergreen are examples of aromatic plants and essential oils that have brought multiple economic and social benefits to actors throughout the chain. They are illustrative of the range of issues NTFP products in Nepal face as well as the progress that has been made in expanding NTFP enterprises since the community forest user group (CFUG) system became the preferred forest management legal structure. This report has gone into depth on the nature, wealth and power aspects of Jatamansi and Wintergreen. While much can still be done to improve the sector, Nepal has made significant strides in the last 10 years despite challenging political conditions and increasingly demanding and competitive world markets. Table 16 looks at where the essential oil sector was 10 year ago in Nepal, its current state and envisions where it could be if recommendations from this report, and the existing Nepali networks dedicated to the NTFP sector, are implemented.

Table 16: Trends in Benefits Obtained by Various Actors within the Value Chains

Issue	10 Years Ago	Current	Goal for Next Five Years
Forest Management and local resource management	Community Forestry beginning stages with few CFUGs organized in the upper mountain, NTFPs not in operational plans	NTFPs included in some plans, models of good CFUG governance; 21 CFUFs are FSC-certified	25% of CFUGs include NTFPs for commercial harvesting, are implementing effective Ops, and have attained good governance
Coordination among major sector actors	No formal bodies to bring together CFUGs, government, private sectors and NGOs	NNN, HJSS, NTFP Coordinating Committee, etc. all provide regular forums for interaction among actors	These bodies are still functioning and have made significant progress on stated objectives
Effective Resource Management and Scientific Harvesting	"Free for all" NTFP collecting in the field and no knowledge of scientific harvesting	Some CFUGs bringing harvests under control, select work done on scientific harvesting and pilots done in field	Make scientific managed regeneration and harvesting mainstream for collectors 50% of OPs have clear and enforced harvesting plans.
Financing for local processing	Non-existent	Some local capital invested	Develop NTFP-specific lending programs with Nepal financial institutions
Value Added Processing	Raw NTFPs largely traded illegally to India with no value added – 90% of Jatamansi not processed; Wintergreen has little trade and processing	75% of Jatamansi and 100% of Wintergreen now processed into oil	100% of Jatamansi and Wintergreen processed in Nepal
Market Information for Harvesters	No market information and harvesters at the mercy of traders	MIS system operating in 12 districts for 42 products	Build on MIS system to education collectors on harvesting and quality control issues and double the number of districts covered by the MIS
Product Positioning in International Markets	Little of no sales in International markets beyond India	Jatamansi achieves sales in European markets and certification programs initiated	Nepal has established market position in international market beyond India

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