

DEVELOPMENT OF MARKETING OF MEDICINAL PLANTS AND OTHER FOREST PRODUCTS - CAN IT BE A PATH WAY FOR EFFECTIVE MANAGEMENT AND CONSERVATION ?

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Introduction

The Medicinal and Aromatic Plants (MAPs) and their products have a very long history of being utilized and traded in the lower Himalayan region and plains of India from the higher Himalayan mountains. There are three main stakeholders involved: the industry, the consumers and the primary producers/collectors of raw materials. There has been a recent dramatic surge of interest in MAPs. Such increased interest appears to be the result of emerging new strategy for economic development, health improvement and conservation and management of valuable species. The underlying assumption is that if local communities or traditional societies can benefit from MAPs and forest-based incomes, they will conserve and manage the forests better. While this assumption is still unproven, it has created interest in identifying the importance of MAPs having high value to local as well as regional and national economies.

The question is now whether the growing demand for MAPs would lead conservation and management of

ecologically valuable taxa or not? The answer would be yes, if, the local communities involve themselves in cultivation/sustainable harvest of Non-Timber Forest Products (NTFPs) i.e. *Hippophae rhamnoides*, Lichens (jhula), *Morchella esculenta* etc. and respond to the greater demand for the products. While traditionally, local communities have been perceived as being subsistence rather than market oriented, more recent studies have cited the importance of forest products not only for direct household consumption, but also for cash income and that the communities are becoming increasingly integrated with regional and national economies (Maikhuri *et al.*, 1998; Nautiyal *et al.*, 2000, 2001; Joshi, 2001; Prasad *et al.*, 2002). As a result of improved infrastructure and communications, local communities that were once isolated are more aware of external opportunities and products and more vulnerable to external control and deterioration of local resources. It is this vulnerability to external demands and control that creates the challenge of combining the development of MAPs markets and community income with the conservation of the forests (Raghupathy, 2001).

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Collectors, concessionaires and traders

In the past, the cultivation, collection and marketing of MAPs that were exported or processed into high value products (Medicinal plants, essential oils, etc.) was often under a concession or license holder. The common pattern under the concession system was for a government department or agency to grant a concession to an individual or cooperative for products in a designated forest area in return for fees or taxes. Some concessionaires were good managers, providing backup, instructions etc. Since many forest products are scattered throughout the forest, geographically distant from settlements and seasonal, the concessionaire needed to have a number of collectors to gather the product. To attract collectors, the concessionaire also acted as trader. Medicinal plants and forest products were traded for goods and it provided leverage of force for collection of the product. There is still a very negative perception of NTFPs as source of income generation in many areas because of the debt burden and exploitation that often occurred. At present, the concessionaire system is being restructured or totally done away within countries in the region, and there are increasing attempts among collectors to form cooperatives/associations, but the pattern of gatherers/collectors dealing individually with an agent is still common. The very nature of distribution of most medicinal plants collected from forests ensures that only a small amount will be collected by any one individual.

Middlemen traders/retailers and their functioning

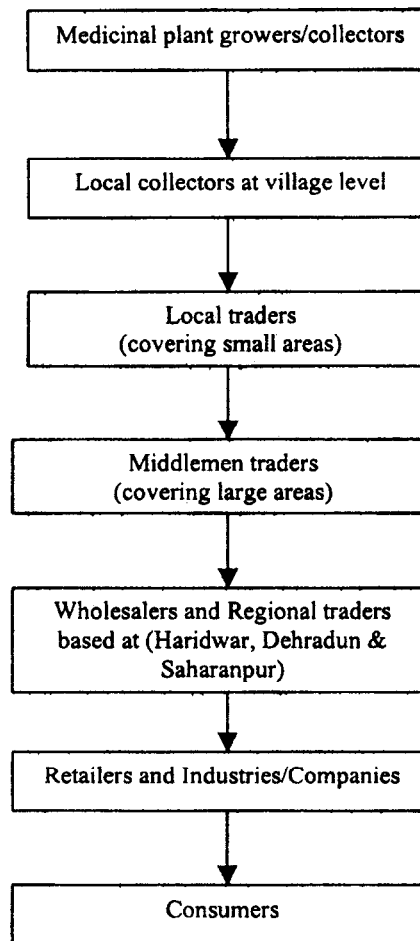
Because of the small amounts of MAPs

or forest products of the individual gatherers/grower, very few forest products are sold directly from the gatherer to the wholesaler or processor. Middlemen initially buy the product and then move it to the next stage in the marketing channel. The relationship with the village trader is a serious lifetime relationship of which the cash advance is but one component. Several village level traders may have dealings in the same village, so there is competition between the traders which inhibits the development of a more exploitative 'debt bondage' relationship. The village trader also provides important services to the gatherer/grower. The trader not only advances money during the period of food shortages before the monsoon, but may also arrange for the transport bundling, weighing, pottering and temporary storage. It is through providing these services that the village trader is able to attract gatherers/grower, and it is through his ability to store (and thereby speculate on product prices) that enables the trader to obtain (if he speculates accurately) a fairly high return on his expenditures.

Markets and marketing channel

Traders at the roadhead and along the main trails are the critical link between medicinal plants and the market. They receive market information on species and price along with cash advances from large wholesalers from the plains, and they are the first major point of transaction for local collectors (Fig. 1). There are many traders who double as shopkeepers, lodge operators, and farmers. In addition, a number of opportunistic buyers from plains or owners of firms periodically visit the region in search of more direct supplies.

Fig. 1



Market channels of higher Himalayan medicinal plants (Central Himalayas)

Resident traders have their own territories based on kin relations or other historical ties. They are of different ethnicities and have varying levels of business savvy and political influence. At times they may work in collusion, but mostly operate independently. As such, roadhead prices can be competitive, and a collector is free to sell as he pleases. Contrary to popular notions, the relationship between resident traders and

collectors is not necessarily exploitative. Traders can play a very important role in village economies by providing a needed source of credit, cash and marketing assistance. Traders and collectors may also be bound together by a mutually beneficial ritual brotherhood. On the other end of the scale, certain powerful traders may force collectors to sell exclusively to them. All these arrangements were observed in the buffer zone villages of Nanda Devi Biosphere Reserve and other villages located in higher altitude areas of the Central Himalayas.

Gaps in the marketing chain - the 'Black Hole'

But what happens after the product leaves the concessionaire, licensed agent or initial middleman? Although initial agents may deal in a number of forest products each product may later enter separate marketing channels. If it is a product used by local communities, a portion or all may be used by the household or marketed locally. If the product is primarily for external markets, most of the market channel (and income) will be elsewhere. The marketing analysis usually ends at the community or perhaps the initial middleman.

It is this part of the marketing channel – after the product leaves the community or initial middleman and before its arrival at the processor or the final consumer – which is relatively less is known, especially if the products are illegal, taxed, or regulations ban harvest or export. In order to fill in the gaps, current marketing analysis often estimates product (and income) flows by taking information obtained from a community and projecting it through a sequence of

exchange until it reaches the final consumer, or taking information obtained from the retailer or processor and projecting it back to the collector (Table 1). This form of analysis may provide a rough estimate of the amount of the product in the marketing system, but it does not explain the processor of the marketing system (including who does the collection, level of household dependency on the product, sustainability of current harvest levels, and sharing of income and benefits, the important role of the middleman in providing cash advances, transport, or additional or preferred marketing channels of the product).

Barriers to market information

There are barriers to filling in the gaps between producers and the consumer or large processor. While the marketing channel can be determined, other

information concerning the amount of the product, prices, and destination are more difficult to obtain. One of the primary barriers in obtaining information is the difficulty of gaining access to the major wholesalers or processors. Accuracy of information is also a problem and more difficult to ascertain. In the village or the initial assembly points (i.e., the roadhead) observation combined with an interview can provide fairly accurate information. However, when interviewing (or attempting to interview) a wholesaler, the large quantity and variety of products on site may make verification of information difficult.

Regulations that encourage the flow of products into illegal channels also make it very difficult to do an accurate analysis. Information can be obtained on legal exports from official documents, although it should be recognized that products that

Table 1

Price of medicinal plant raw material (US\$/kg)

Species	Levels in the marketing channel		
	Villagers	Village agents	Wholesalers
<i>Aconitum heterophyllum</i>	15.78	23.58	36.75
<i>Allium humile</i>	1.39	1.90	2.91
<i>Allium stracheyi</i>	1.39	1.90	2.91
<i>Angelica glauca</i>	0.63	2.03	3.42
<i>Carum carvi</i>	2.03	6.33	10.13
<i>Dactylorrhiza hatagirea</i>	3.80	7.59	11.39
<i>Megacarpaea polyandra</i>	0.38	0.51	0.63
<i>Morchella esculenta</i>	51.50	82.40	124.42
<i>Nardostachys grandiflora</i>	1.10	1.62	1.90
<i>Pleurospermum angelicoides</i>	0.63	1.52	2.41
<i>Picrorhiza kurrooa</i>	0.71	1.22	1.87
<i>Saussurea costus</i>	0.63	1.90	2.53
<i>Taxus baccata</i>	1.10	1.56	2.58

are carried by porters across a border or region, the amount sold, benefits/income distribution etc., of what is not 'formally' exported, but sold in local markets, or utilized by the local community is therefore based on estimates from case studies, and the 'bits and pieces' of information that are available.

Marketing and sustainability

Information on the flow of products is important not only for marketing analysis, but also for an assessment of the sustainability of the market for medicinal plant cultivation and conservation. In order to determine sustainability, information must be gathered on current and past yield and marketing patterns, communities' perception of whether medicinal plant resources are more or less prevalent than in the past, and future market demand (Maikhuri *et al.*, 2000a; Rao *et al.*, 2002). External markets exert the greatest pressure on forest resources. Without external markets, communities utilize the resources, but there is little 'push' to gather/cultivate more of a product than can be utilized by the household or community. When marketing opportunities do appear, the community may have difficulty in cultivating the medicinal plants since they are facing problems in obtaining good quality and sufficient quantities of planting materials. They are also uncertain about the agrotechniques and the optimum yields. Only few studies have reported the yields of medicinal plants and the cost: benefit ratios (Table 2; Maikhuri *et al.*, 2000b).

Control of resources

While there might be traditional mechanisms to regulate, access and gather

the forest products, these rights of control (including the right of exclusion) are frequently no longer recognized by other communities who want access to the resources or by the state or state agencies. Local communities are often minorities and/or the weaker section of the society with little political power. The communities right to live in or adjacent the forests is frequently in question, especially with the current global concern for conservation. When the income from a product increases, then competition within a community and between communities may increase as well. Within the community, the dependency on forest products will be related to other resources of the households. It is common to find that it is the poorest households, with less agricultural land, livestock, adult females/males, etc. that are the predominant gatherers of forest products. While the actual amount of income earned from Non-Timber Forest Products may be small, it may provide the largest portion of that household's income. These are the households that are the most vulnerable to competition both within and among communities.

Valuation and pricing mechanism

There are few perfect markets. The predominant pattern in medicinal plants and other forest product markets is many producers, a small number of wholesalers or processors, thus rather than competition, cooperation among the wholesalers results. In medicinal plants and other forest products, the buyer usually sets the price and the gatherer/grower responds to the price. Theoretically, if the price for a product is regarded by the collector as being high (a good price), more will be cultivated/gathered and sold.

Table 2

Total income of per hectare production and price for various medicinal plants

Botanical name	Local name	Expenditure (Rs./ha)	Income (Rs./ha)	Profit (Rs./ha)	Income/Expenditure ratio
<i>Aconitum heterophyllum</i>	Atis	3560	78750	75190	22.3
<i>Allium humile</i>	Ladum faran	2957	37620	34663	13.0
<i>Allium stracheyi</i>	Jimbu pharan	2618	29220	20702	9.0
<i>Angelica glauca</i>	Choru	2998	27750	24752	9.0
<i>Arnebia benthamii</i>	Balchari	4870	54000	41130	11.0
<i>Carum carvi</i>	Kala zeera	1630	40000	38370	25.0
<i>Dactylorrhiza hatagirea</i>	Hathajari	2680	33750	31070	12.5
<i>Megacarpaea polyandra</i>	Barmaoo	1999	12750	10571	6.0
<i>Nardostachys jatamansi</i>	Jatamansi	3047	58500	55453	19.2
<i>Plantago ovata</i>	Isabgol	2900	12000	9100	4.0
<i>Picrorhiza kurrooa</i>	Kutki	2817	27500	24683	8.7
<i>Pleurospermum angelicoides</i>	Chhippi	2998	27750	24752	9.0
<i>Polygonatum verticilatum</i>	Salam mishri	3870	66150	62260	17.0
<i>Potentilla fulgens</i>	Vajradanti	4570	55250	50690	12.0
<i>Rheum australe</i>	Archa/Dola	4150	57000	52850	12.7
<i>Saussurea costus</i>	Koot	3360	30625	27265	9.0

(Source : Maikhuri *et al.*, 2000b)

However, local communities often have few options for generating income. The lack of alternatives for income results in medicinal plants those cultivated or gathered sold even when prices are relatively (based on price history for the product) low. It is this lack of alternatives that results in the low prices of medicinal plant and other forest products in many local communities.

There is a lack of information. The gatherer may not know what the consumer wants or need. While products flow out, little information flows in. The longer the marketing chain, the less likely that this information will be available to the producer. The middlemen may not know

what is desired by the final consumer and may not effectively get this information to the producer. Price information also may not flow back to the grower/collector. Few collectors (or middlemen) may know the final price paid by the consumer or processor. While this may in some instances be intentional (in order to keep the profits at the other end of the marketing chain), it is also the result of the distance the product may travel as well as the lack of awareness that the current system may be changed. Without this information it is difficult for a grower/collector to determine what is a good price and the real value. Also, without information as to the value determined by what a customer is willing to pay for the

product, the collector cannot negotiate for a larger portion of the final price.

Marketing is the process of exploring which products potential customers will purchase and then producing, processing, promoting and distributing the products at a profit. In reality, the gatherers/growers of MAPs do not market their products, rather they sell the products to a customer (the middleman). If the goal is for the communities to retain a larger portion of the income generated by medicinal plant cultivation and NTFPs the task of both the producer and those involved in assisting market development of both the products is to transform the current process from selling to marketing at the community level. However, there are obstacles inherent in medicinal plant growers/gatherers and the current marketing system that will hinder this transformation (Box 1).

Factors influencing prices

The prices of medicinal plants also show variations as per demand-supply scenario. Besides, the prices are also affected by the seasons and quality of materials. The demand also increases by the discovery of new drugs or medicinal properties of a particular plants. *Taxus baccata* leaves prices suddenly increased with the discovery of the properties of plant for curing cancer. Similarly legal, illegal and unsustainable harvesting and use of valuable MAPs, affects their availability and thus increases the prices.

Processing or semi-processing and value addition

Establishing processing and semi-processing units in the form of small cottage industries dealing with medicinal plants at the village level in the

Box 1

Market and marketing of medicinal plants : A major constraint

- Market for MAPs is very erratic and shows wide disparity in their market values.
- Barriers to information : Information concerning the amount of the product, price and destination is more difficult to obtain.
- Many other problems related to the marketing of medicinal plants:
 - (i) small quantities/many collectors,
 - (ii) services provided by middleman, and
 - (iii) policy and regulations.
- To develop marketing systems that provide greater benefits to the community (and might lead to conservation of the species) the following is needed:
 - (i) local management of medicinal plants
 - (ii) cooperatives/community,
 - (iii) removal of regulations, and
 - (iv) market analysis.

inaccessible, remote and far-flung areas would definitely ensure better profits to the primary growers or collectors. It will not only reduce the transportation and carriage expenses of raw materials but will also provide ample opportunities to generate wage employment for rural populace. These measures to be incorporated in the category of semi-processing of the raw materials are cleaning and grading to be performed at the collectors/growers level which will not only enhance the price but also improve the quality of the materials. Besides, the value addition of medicinal plants may involve activities like drying, pulping, making concentrates, powdering, boiling, distilling etc. which may be done at village or community level but it must ensure the quality of the final materials. The semi-processing and value addition at the grower/collector level might be suitable provided there is an assured buy-back arrangement with an industry or exporter or big businessman. Even simple

activities related to processing or semi-processing and value addition of medicinal plants are found difficult to be managed by the poor farmers/collectors. Therefore, those small processing and semi-processing units may run smoothly at village or community level which may provide viable returns to the people/community involved in short-and long-term basis.

Conclusions

Policy interventions for medicinal plant cultivation has to consider marketing as a major component and developing medicinal plant information bulletins similar to horticultural information bulletins to collect, compile and disseminate the production, processing and consumption of these low volume and high value crops. Such initiatives will require not only government mobilization but also participation of all stakeholders in the marketing chain.

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SUMMARY

Since times immemorial, plants have served mankind by providing food, shelter, medicine etc. In recent times the demand for Medicinal and Aromatic Plants (MAPs) has increased rapidly in the global market. Domestic sales are growing at a rate of 20% per annum, while the international market for herbal products is estimated to be growing 7% per annum. Due to rapidly increasing demand of MAPs, a number of species are known to have become rare, endangered, threatened and extinct. Every year thousands of tonnes of these plant resources are being exploited from the natural habitat either legally or illegally without fair benefits accruing to the local people. Indian Himalayan region is the storehouse for the MAPs, besides bearing the largest economic resource being tapped, but local communities get only a tiny fraction of the profits. It is historically a secretive trade and little is known about who collects, who trades, who profits and whether there is over-harvesting. It is established that the basic causes of unsustainable harvesting are ignorance, poverty and lack of alternative livelihood support systems accompanied by encroachments by outsiders. Sustainable harvest with proper buy-back guarantee will provide considerable off-farm employment opportunities to the local inhabitants. Traditional and local communities are the true resource managers with deciding

roles in the conservation, management, use and development of MAPs in the Himalayan region. The conservation and management of MAPs in their natural habitat require active involvement of the local communities at every step. Therefore, effective training and capacity building focused on domestication/cultivation and conservation, improved marketing systems and processing/ semi processing, bio-prospecting and value addition locally are the appropriate short and long term solution to assure conservation and management and sustainable livelihoods to the local communities.

औषध पादपों और अन्य वनोपजों के विपणन का विकास-

क्या यह उनके प्रभावशाली प्रबन्ध और संरक्षण का मार्ग बन सकता है ?

आर०के० मैखुरी, के०एस० राव, कुसुम चौहान, एल०एस० कण्डारी, पी० प्रसाद
व सी० राजशेखरन्

सारांश

अविस्मरणीय काल से पेड़-पौधे खाद्य, आश्रय, औषधि इत्यादि उपलब्ध कराकर मानवजाति की सेवा करते आए हैं। पिछले कुछ समय से, विश्व बाजार में औषधीय और सौरभिक की मांग बहुत तेजी से बढ़ी है। घरेलू बिक्री ही 20% प्रतिवर्ष की दर से बढ़ रही है, जबकि शाकीय उत्पादों के लिए अन्तरराष्ट्रीय बाजार में इनकी बिक्री 7% वार्षिक की दर से बढ़ रही है। औषधीय और सौरभिक पादपों की तेजी से बढ़ रही मांग के कारण पादपों की काफी संख्या दुर्लभ, संकटापन्न और विलुप्त हो चुकी है। प्रतिवर्ष इन पादप संसाधनों का हजारों टन माल इनके प्राकृतिक आवासों से कानूनी या गैरकानूनी ढंग से निकाल कर उपयोग में लाया जा रहा है जिससे स्थानीय लोगबागों को कोई खास लाभ तक नहीं पहुंचता। भारत का हिमालयी क्षेत्र औषधीय और सौरभिक पेड़पौधों का भण्डार है और उसके साथ यह सबसे बड़ा आर्थिक संसाधन भी है जिसका विवेहन किया जा रहा है। किन्तु, यहां के स्थानीय समुदायों का इन लाभों का मामूली-सा अंश ही मिल पाता है। ऐतिहासिक दृष्टि से यह चोरी छिपे किया जाने वाला व्यापार है और बहुत कम यह ज्ञात है इसके बारे में कि कौन इनका संग्रह करता है, कौन व्यापारी है, किसे व्यापार का लाभ मिलता है और इसमें अतिकटाई हुई या नहीं। यह निश्चित हो चुका है कि दीर्घकाल तक कटाई न किए जा सकने के आधारभूत कारण अज्ञान, गरीबी और अजीविका प्राप्ति की अन्य सहायक प्रणालियों का आभाव ही हैं, जिसके साथ बाहरी आदमियों का आकर अतिक्रमण करना भी सम्मिलित हो गया है। समुचित खरीद होने की पक्की गारण्टी के साथ दीर्घकालिक फसल-कटाई की जाने से स्थानीय लोगों को इससे खेती न होने वाले समय में काफी रोजगार अवसर भी मिलेगा। पारम्परिक और स्थानीय समुदाय ही सच्चे संसाधन प्रबन्धक हो सकते हैं जिनकी हिमालयी क्षेत्र के औषधीय और सौरभिक पेड़पौधों के संरक्षण, प्रबन्ध, उपयोग और विकास में निर्णयकारी भूमिका रहेगी। औषधीय और सौरभिक पादपों की उनके प्राकृतिक आवास में संरक्षण और प्रबन्ध करने के लिए प्रत्येक कदम पर स्थानीय समुदायों की सक्रिय सहकारिता की जरूरत होती है। इसलिए संरक्षण और प्रबन्ध तथा स्थानीय समुदायों का दीर्घकालिक आजीविका मिलते रहना सुनिश्चित बनाने का अल्पकालिक और दीर्घकालिक समुचित समाधान घरेलूकरण। कृषि और संरक्षण, सुधारी हुई विपणन प्रणाली तथा विधायन/उपविधायन, जैव-भविष्यदर्शन और मूल्य-वर्धन पर ध्यान केन्द्रित करते हुए स्थानीय आधार पर प्रभावशाली प्रशिक्षण और क्षमता संवर्धन करना ही है।

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