

Community Managed Enterprise: Participation of Rural People in Medicinal and Aromatic Plants Conservation and Use

By

Bhishma P. Subedi

Biodiversity Program Director

Asia Network for Small Scale Agricultural Bioresources

P.O. Box 11035, Kathmandu, Nepal

Tel.: 977-1-411964, Fax: 977-1-411859, EMAIL: ANSAB@mos.com.np

and

Nirmal K. Bhattarai, Ph. D.

Chief

Economic Botany & Ethnobotany Section

National Herbarium, P.O. Box 938, Kathmandu, Nepal

Tel.: 977-1-413396, Fax: 977-1-422446, EMAIL: mansa@ccsl.com.np

A paper prepared for the International Conference on Medicinal Plants, February 16-20,
1998, Bangalore, India

Community Managed Enterprise: Participation of Rural People in Medicinal and Aromatic Plants Conservation and Use

By
Bhishma P. Subedi and Nirmal K. Bhattarai

ABSTRACT

Humla is one of the most remote and least developed districts of Nepal where the majority of the population are involved, directly or indirectly, in the collection, transport and trade of non timber forest products. Increasing market demand for them, poverty, and lack of employment opportunities have exerted additional pressure on the wild medicinal plant resource base, posing considerable threats to the district's biodiversity and economic stability. Although there are considerable evidences of over-exploitation of certain medicinal and aromatic plants in some accessible localities, major part of the district is still under-exploited. This situation provides ample opportunities for the medicinal and aromatic plants of the district to get managed for the economic development as well as environmental benefits.

Humla Oil Pvt. Ltd. (HOPL), a community based enterprise, was established to create a mechanism of involving local people, the major stakeholder of biodiversity of the area, in conservation for the sustainable use of their natural resources. Experience has shown that the technical, financial, managerial, training and marketing supports have developed adequate incentive among the local people to manage and sustainably harvest the raw materials to assure biodiversity conservation, and smoothly run the enterprise to assure steady economic benefits to the local communities. If the wild plant resources of an area is to serve the needs of the local people in a sustainable manner, it has to be considered in the perspective of sound management having additional benefits to the local people. Our approach to encourage the sustainable management of common property resource, therefore, should be in multiple directions, from improving the economic standard to changing the attitudes of the local people.

1. INTRODUCTION

Humla is the second largest district of Nepal with an area of 5655 sq. km and a population of about 35,000. The district is located in the northwest corner of the country and is one of the most remote regions, with the nearest road in Nepal a two week journey by foot from Simikot, the District Center, to the roadhead in the *Terai* (Map 1). While the district's southern margin has limited subtropical valleys, most of the district is temperate or highland. A cold, generally dry, climate exists in the high alpine valleys north of the southern arm of the Himalaya that runs across the bottom of Humla.

The region is a partially rain-shadow area, separated much from the southern monsoon rain by a series of high mountains. July and November are the most and least rainy months, respectively. The altitude of the district ranges from 1500m to over 7000m, with a wide variety of micro-climates characterized by elevation and aspect. As is true throughout the Himalaya, Humla's natural vegetation communities are primarily defined by an altitudinal gradient. The transition are so foreshortened that, in some parts of Humla, the subtropical vegetation found in the valleys and the arid vegetation of the Tibetan plateau are separated by an aerial distance of less than 25 km.

Mountainous part of Nepal is rich in medicinal and aromatic plants (MAPs) but the increasing national and international demands for them, coupled with rural poverty, lack of income generating opportunities, demographic pressure, illiteracy, and

map

traditional system of harvesting and trade have resulted in the degradation of the resource base of these plants. The traditional systems are neither capable of sustaining natural ecosystem and biodiversity nor providing enough income to collectors to improve their lifestyle (Subedi 1997, 1998). The structure and functioning of the social system is supporting the vicious cycle of poverty and the degradation of environment. To address this situation Humla Oil Pvt. Ltd. (HOPL), a community based enterprise, was established in Humla district of Nepal in 1994 with the assistance from Asia Network for Small Scale Agricultural Bioresources (ANSAB) and Appropriate Technology International (ATI). The goal of establishing HOPL was to create a mechanism of involving local people, the major stakeholder of biodiversity of the area, in conservation for the sustainable use of their natural resources.

This paper presents the mechanism of involving local rural people in the conservation of MAPs. Specifically, it examines the process of creation and operation of the HOPL and lessons learned that may be useful to provide similar support in developing conservation oriented enterprise.

2. THE CONTEXT

The raw material supply base of the enterprise is nearly 43,000 hectares of forest, scrub and grass-land. At least 50% of households from eight Village Development Committees (Bargaon, Chhipra, Kharpunath, Lali, Raya, Ripa, Rodikot and Thehe) of Humla (with a total population of 9722 in 1745 households, with the average household size of 5.57, according to 1991 census) have been participating in the enterprise in one way or the other.

Altogether 102 species of MAPs were recorded and identified in the project area of which 16 are in trade commercially, other 31 have potentials to enter into trade, and another 55, all the 16 commercial and 24 of the potential species find subsistence uses in the Humla Project area (Subedi 1998). A list of commercially traded medicinal and aromatic plants of Humla district along with their ecology and usage is given in Annex 1.

This project area is inhabited by mixed caste and ethnic groups of both Buddhist and Hindu communities including Bhramin, Thakuri, Chhetri, Lama, Byansi, Kami, and Sarki. Most of the people are illiterate (70%) and almost all households do farming of crops or crops and livestock as their main occupation(s). Thus, a majority of the population is predominantly agrarian and subsistence in nature. Their social, religious, and cultural practices, in one way or the other, are linked with the natural resources.

Since ancient times, until very recently, the people of Humla used to barter certain medicinal herbs for iron tools, grain and clothes with the traders of Jajarkot, the neighboring district. Likewise, people from Jumla, another neighboring district, used to come into Humla to harvest *Kutki* (*Picrorhiza scrophulariiflora*), *Atis* (*Delphinium himalayai*), *Panchaunle* (*Dactylorhiza hatagireia*), *Guchche-chyau* (*Morchella conica*, *M. esculenta*), and *Silajit* (organic exude from rock). But the markets for most wild harvested plants from Humla have developed more recently. Herbs like *Bhutkesh* (*Selinum tenuifolium*), *Lekh-Satuwa* (*Trillidium govanianum*), *Bhojpatra* (*Betula utilis*), *Sugandhwal* (*Valeriana jatamansi*), and *Guchche-chyau* (*Morchella conica*) have been harvested for just a few years and the current demand for *Jatamansi* dates back to less than two decades.

The people of the district have traditionally traded goods between India and China. Previously, when all the routes (posts) between India and China were closed, their business flourished most. Now, when India and China have good relations, their traditional trade have declined considerably. Consequently, the activities of the local people have largely been concentrated towards the collection and trade of medicinal herbs and other non-timber forest products.

Apart from commercial harvesting of economic plant species, the majority of the Humli population use wild plants in a variety of ways, the additional uses being for food, folk medicine, fodder, fuel, and a variety of domestic articles. They are also used for dyes, tannin, fiber, gum, resin, agricultural tools, and hunting weapons. Some species are also used in worship and other mythology.

Most communities in Humla district realize the importance of maintaining an intact and viable ecosystem. In most cases, they also realize the importance of biodiversity conservation and adopt certain forms of traditional management practices. Low population pressure accompanied by indigenous management practices and remoteness have preserved the natural resources of the district for generations. Although the traditional systems have remained functional for a long period, it cannot serve as the model for the future.

The threats for these resources are directly linked to human activities such as uncontrolled harvesting (over harvesting, premature harvesting, unscientific methods, etc.), over grazing, burning, shifting cultivation, and other activities of deforestation and habitat destruction. These activities are the results of several socio-economic factors such as unclear definition of property rights, cash need of the local people, illiteracy, lack of knowledge on conservation, and increasing market demand of these products.

In the existing trade channel local collectors harvest the raw materials from national forest lands, carry them back to their houses where they are dried and then either sold to a trader at the village or district center. Traders regularly travel through the collecting areas of Humla before the harvesting seasons placing orders with collectors for set volumes at an agreed upon price and usually providing an advance on the final payment. These traders then come back after collection is completed and finalize the purchase. Occasionally they would pay only a fraction of the agreed upon price and the collectors are forced to sell at a lower rate than they expected as there are a limited number of traders. Some collectors tried to market their products directly in *Terai* wholesale market, but this became costly and risky. The existing trade channel is not providing a fair share of profits to collectors of Humla. The market, although imperfect, has been operating for a number of decades. The raw material from this area eventually makes its way to India where it is sold to traders and processors for use in cosmetics, consumer products, and medicines.

Heavy use of these resources converted formerly diverse vegetation into homogenous strongholds of a few resilient species. The homogenous belts of vegetation surrounding villages, or in other areas of heavy use, illustrate the degradation and loss of biological diversity close to human settlements. The vegetation around the villages of the project area has been most significantly transformed by human use for cultivation including slash and burn agriculture, grazing, fodder and fuelwood collection. The degraded areas are often taken over by resilient species such as *Urtica dioica*, *Girardinia diversifolia*, *Salvia moorcroftiana*, *Chenopodium album*, *Prinsepia utilis*, *Artemisia sieversiana*, *Rumex nepalensis*, *Berberis asiatica* and *B. aristata*.

Very recently, most collectors have experienced the disappearance of commercially valued non-timber forest products including medicinal and aromatic plants from the more accessible locations as well as the decrease in their population in more remote harvesting areas.

3. TECHNICAL SUPPORTS AND ENTERPRISE DEVELOPMENT

The initial planning and subsector analysis of non-timber forest products (NTFPs) was done with the participation of local stakeholder and outside experts. The planning exercise concluded that a community based processing enterprise to process a variety of medicinal and aromatic plants would be feasible in Humla and a business plan was prepared. Following this HOPL was established in 1994, which is owned and operated by local communities and

technical assistance has been provided by ANSAB and ATI with the financial support from Biodiversity Conservation Network and ATI. Heavy technical support was needed at the beginning which has been gradually lowered as the local institutions have become more capable and enterprise has made adequate profit to cover the investment and became financially viable. The process of creating and running this enterprise is presented below.

3.1 Creation of Community Based Organization

Humla Conservation and Development Association (HCDA), a local community based organization (CBO), was created representing all stakeholder including collectors, traders, local communities, women's group, and local leaders. Continuous support is being provided to enable HCDA to become a sustainable institution, with well established system of operation.

HCDA currently works in support of local NTFP collector societies and Community Forest User Groups (CFUG). HCDA, with the assistance of ANSAB and ATI, has been contracting for outside expertise when necessary to accomplish specific technical tasks beyond the capacity of local communities. To date, HCDA has helped local communities to establish Humla Oil Pvt. Ltd., design and implement community forests, and monitor the impact of commercial activities on local biodiversity.

As was the aim at the time of its establishment, HCDA has already started taking over the responsibility of project initiated activities that will continue even after the end of the project funding. It has already established its reputation and trust with local communities of Humla and outsiders. As a result, it has started getting fund from other organizations to conduct community based conservation and development activities.

3.2 Establishment of Community Enterprise

Humla Oil Pvt. Ltd. was established with the financial and technical support from ANSAB and ATI. All the activities of HOPL are now performed by local people. Through training and practical experiences they have become not only capable of performing technical and managerial tasks but also have developed confidence in providing technical supports to other communities. The technical assistance needed from outside, during the addition of its second distillation unit in 1996, was lower in comparison to the first one. Currently, two separate production facilities of HOPL process four high altitude medicinal and aromatic plant products collected from the forests and pastures of Humla for the high-value essential oils. With assistance from ANSAB and ATI, Humla Oil Pvt. Ltd. markets its products directly to users in India and Europe, and through a distributor in the United States.

3.3 Science and Technology for Value Addition

Although the technology behind processing of many MAPs is relatively straightforward and a wide range of Ayurvedic preparations are produced, the processing industry is in its infant stage in Nepal. The main difficulties are getting reliable information, processing technologies and access to market (Subedi, 1997). There are neither any enterprise for value-addition to raw materials of MAPs nor a considerable number of cottage industries in Humla. With little or no exposure to any processing activities, it is very difficult to imagine for local people about any processing technology. A simple water-cum-steam distillation technology was identified and a machine was designed to operate in remote area with little expertise. It was designed to run with fuelwood energy source initially but it can adopt electrical power source as well when electricity becomes available from the microhydro power plant, which is being established with the assistance of ATI and ANSAB. The power generated will also be utilized by the local communities, mainly for lighting purpose.

3.4 Market Support Services

It is always difficult to get the good marketing information by local communities themselves. The understanding of the market dynamics and on-going trend is as important as the current market information. Market support services was started with the market system analysis to generate information needed for sustainable management, fair prices, and efficient market.

Development of the marketing infrastructure including telephone, storage, and processing facilities has supported the local traders and enterprise to profitably market their products.

Another very important support needed by the community was start-up and working capital for the enterprise. ATI and ANSAB arranged the much needed capital by establishing a revolving equity fund administered by the HCDA. The main objectives of the revolving equity fund are to assist the people of Humla (individually or in groups) to establish businesses based on the collection and processing of NTFPs and other natural resources (Subedi 1997).

The increased access to the market information and the establishment of processing enterprise resulted into increased market competition. This situation has become beneficial to the collectors providing higher prices for the raw material at source.

3.4 Resource Management Inputs

Inputs were provided for raising awareness and improving technical skills for resource management including *in situ* management, cultivation, harvesting, and post harvesting operations. The management skills and practices has been improved by combining the indigenous knowledge and external expertise.

Following the basic literacy classes, a specially designed conservation training module was used to raise conservation awareness and specific management techniques to the newly formed CFUGs.

In the process of facilitating the community forest hand over, ANSAB Foresters provided a range of options for the utilization and management of forest and pasture resources. The CFUGs made use of these options to prepare their management plans. Special emphasis was given regarding the sustainable harvesting of *jatamansi* root (*Nardostachys grandiflora*), and of several other aromatic plants including *sugandhwal* (*Valeriana jatamansi*), Juniper (*Juniperus indica*), and *Sunpati* (*Rhododendron anthopogon*). The prescriptions were based upon a sustainable rate determined through botanical inventories estimating biomass and productive potential of the target species.

4. THE RESULTS

A community owned, community managed and locally available resources-based enterprise that is directly linked with the economic development of the local people as well as that of the country, has been established.

The local community have realized that they had been merely a supplier of raw materials for value addition in distant localities. With the establishment of the processing enterprise at their locality, they have also understood that the previous tradition had deprived them of additional employment and economic development opportunities.

An increased participation of the collectors and other community members towards the sustainable management of the resource base is the most noteworthy achievement of the newly established enterprise.

The local people have been convinced that the value addition procedures at local level can make them largely independent of the different levels of stakeholder outside the area including various levels of market forces with more opportunities for employment and economic development.

The local collectors have realized the destructive nature of their traditional collection practices and have been increasingly convinced that a collection practice, better than their own in terms of resource sustainability, exists which is closely related with the long-term supply of raw material and increased economic benefits.

This realization, assisted by adequate orientation and training, has initiated the practice of controlled harvesting together with managed utilization of common property resource. This has also resulted in the increased community control over common property resource.

A group of trained local manpower in terms of sustainable harvesting practices, value addition procedures, management and marketing skills, have been developed. They have become efficient as well as the most effective influential local persons, capable even to act as motivators and trainers in identical attempts in other parts in future.

5. LESSONS LEARNED

Our approach to improve or restore the ill effects of resource misuse and economic degradation should be in multiple direction, from improving the economic standard to changing the attitudes of the local people. A number of lessons were learned from this case study. Some important among them which can be useful to share by others doing similar efforts in developing conservation oriented enterprise are listed below.

1. Establishing a community based enterprise that depends on local biodiversity can be a strategy to provide more equitable returns to community groups and hence incentives for conserving the resource base.
2. A community group owned enterprise gets more support from the local people than the one owned by local individual or outside investors.
3. Community training and capacity building are a necessary prerequisite to income generation and local biodiversity conservation program as important decision on use, management and conservation of biological resources are made at local level. By providing the communities with technical, financial, managerial, marketing and training support, they will have a new economic incentive to conserve the resource base of their raw material, thus conserving the biological diversity of their area for the benefit of all.
4. As community groups move from being only a supplier of raw materials to processors of those raw materials, they become aware, and promote the conservation of those resources to assure a sustainable supply for their commercial operation.

REFERENCES

- Subedi, B. 1997. *Utilization of Non - Timber Forest Products: Issues and strategies for environmental conservation and economic development*. Workshop theme paper presented at the Workshop on "The Utilization of NTFPs for Environmental Conservation and Economic Development in Nepal" organized by ANSAB on March 29, 1997 in Kathmandu.
- Subedi, B.P. 1998. *Participatory Utilization and Conservation of Medicinal and Aromatic Plants: A case study from western Nepal Himalaya*. A paper prepared for the International Conference on Medicinal Plants held in Bangalore, India, February 16-19, 1998.