

Conservation and Sustainable Use of Medicinal and Aromatic Products in North America: Are There Really Lessons to be Learned?

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Introduction

The purpose of this regional workshop is to “discuss, share and develop ideas and experience between and amongst the policy makers, researchers, resource managers, conservation scientists, field workers, development planners and community farmers in a common forum.” We aim to share experiences in particular among the countries in South Asia, but we are also interested to share experiences between the North and the South. The organizers have provided an excellent forum that we expect will lead to recommendations for future strategies to governments, international donors and civil society groups to improve the thrust, focus and impact of their support to sustainable use of medicinal and aromatic plant resources by local communities.

Our assignment was to “help set the stage” or present some thinking points for the work at hand at this workshop. We were asked to identify and report on lessons learned in North America in the

sustainable use of NTFPs. This was an ambitious goal, as often is found with many areas around the world, we have learned of much MAP experience in our region. However, it is important that we begin with a caveat. Are there indeed lessons to be learned for this region from North America?

We felt at the outset that there is much to be learned right here, and hope that at the end of this session that you will agree. Our observations are based on several years’ experience working in projects on the ground, from the authors’ professional association of nearly 15 years. More importantly this paper is based on a through sharing experience with colleagues in Nepal and throughout the region. NTFP experiences in several countries of many countries outside North America have also been examined.

What was our approach to the assigned task? First, we discuss the legacy of non-timber forest product (NTFP) and, more specifically, medicinal plant use in North America. We will also discuss briefly MAP

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markets both in North America and throughout the world, and then to describe the constraints to the sustainable use and development of MAP resources. Lastly, we have been asked to relate some lessons that may be appropriate for application in South Asia.

But, before we start, there is one critical question we wish to raise - Are there indeed lessons to be learned for this region from North America? Our answer lies in the realization that there are many similarities between the two regions and we will gain from sharing our experiences! But our overexploitation, lack of information on the sustainable management of MAPs, and the dearth of MAP policies leads us to believe that this region is ahead of the world in many aspects of MAP preservation and culture. What follows are our notes based on the presentation made, and the discussion that followed. We invite your comments and suggestions.

Background

North America has a long legacy of non-timber forest product (NTFP) collection and use. Numerous NTFPs are collected and traded from forests or, as with more recently growing markets and shrinking natural stocks, cultivated for trade. NTFPs have been described in four major groups: edible products (berries, fruits, herbs, spices, and foods based on plant derivatives); medicinal or dietary supplements (the topic of discussion here), floral products (decorative products); and specialty wood products

(carvings, and handicrafts) (described by the authors in Hammett and Chamberlain 1999). As in Asia, medicinal and dietary supplements (or MAPs as discussed here) amount to major component of the value traded in the North American NTFP market.

To get a feel for the scope of MAPs in North America, let's discuss a few common MAPs found in the region. Several are increasingly popular; so much so that their survival in the natural environment is threatened. This lesson is not only to be learned in our region - many plants have been extracted to extinction throughout the world. MAPs such as Foxglove (*Digitalis purpurea*), Indian tobacco (*Lobelia inflata*), and Yew (*Taxus brevifolia*, *T. canadensis*) have been well known. Many herbal remedies such as Black cohosh (*Cimicifuga racemosa*), Golden Seal (*Hydrastis canadensis*), and Slippery Elm (*Ulmus fulva*) have been popular both within the region and exported outside the region. The region has a history of MAP production and use for several hundred years, and has exported for nearly 400 years.

North America markets herbal medicinal products derived from 175 species. Over 500 species have been found in the Appalachia region alone, with 125 species identified as having medicinal properties. Meanwhile, the North American suppliers are supplying herbal medicinal products to the worldwide market in ever-increasing amounts. As recent as 1998 the

world MAP market saw \$16 billion in sales, of that Europe had \$7.1 billion in sales and Asia had \$5.1 billion in sales. The U.S. alone has \$3.9 billion in yearly sales.

Markets for some popular North American MAPs are large and have been expanding. *Ginkgo biloba* had U. S. sales of \$90.2 million in 1997, St. John's Wort had U. S. sales of \$47.0 million in 1997, and May Apple saw U. S. sales of \$1.5 million in 1992. Such large markets have driven up demand and in some cases, put pressure on natural stocks.

To perhaps identify some lessons learned in North America that may be pertinent in South Asia, let's look at one well-known example found in hardwood forests in eastern North America - the popular *Panax quinquefolium* or American Ginseng. Patches are still found on north-facing slopes where harvesters collect most often in small quantities. Dried at home and sold to local buyers who consolidate and sell to some large corporations for processing. The export market prefers natural grown, wild harvested Ginseng putting pressure on the wild population. Prices for dried wild Ginseng in isolated cases have reached \$600 per pound the price, but more recently has been \$114 - \$205 per pound. Now listed in CITES, data shows hundreds of tons of Ginseng have been exported from the Eastern U.S. and Canada. Meanwhile, cultivated Ginseng has sold for only \$11 - \$88 per pound, and due to recent declines in supplies of

wild roots, it has been exported in increasingly larger quantities.

Forest harvested Ginseng collected on the forest floor has been the emphasis - especially with a perceived price differential estimated by buyers in China (Williams 1989). However, over harvest caused by black market in for "green gold" in North Carolina has led to concern about sustaining the resource. The Convention on the International Trade in Endangered Species of Wild Fauna and Flora (CITES) formed in 1975 (Robbins 2000) now lists ginseng in Appendix II. This does not limit its harvest, but regulates and monitors the sale and export trade of wild ginseng.

The price of ginseng is often determined by sentiment, not supply and demand (Kains 1903). Anecdotal stories relate that Chinese buyers sort ginseng root into over sixty different products - all associated with different qualities and prices. The market for ginseng in China remains strong, if not unlimited. As early as 1903, it was estimated that 400 million used ginseng in China, a market estimated at "millions of dollars" (Rains 1903, this large market was confirmed by McCaleb *et al.* 2000).

Why this recent MAP markets surge?

First it is important to define the consumers in North America. In many cases this resurgence in MAP sales is due to "Baby Boomers" who have increased spending power and have become

increasingly concerned about their health. In doing so they have embraced herbal products – not just MAPs. In the past only a small group of health conscious consumers shared this awareness of the benefits of natural medicine. Now an increasingly larger segment of the population knows of the benefits of natural products and can afford to purchase these products. They are more health conscience-knowledgeable of the benefits of using natural products instead of processed medicines or vitamins. The natural product craze is here and growing quickly. The presence of an increasingly knowledgeable segment of the population with adequate disposable income is driving this recent surge in sales.

In addition, buying locally made products is in vogue. Local craft fairs are now found in most areas of the region. Natural or organic products and other fresh items are best sold directly to the consumer. These seasonal fairs facilitate and consequently help to further educate the consumer. In chain super markets, many now have a large section of the floor space devoted to fresh or natural products.

Increased amounts of disposable income have meant more travel and purchase of these products is possible, and desirable. In addition, those who see them as better than recently more invasive techniques or surgical procedures desire alternative medicines. As awareness increases the market for MAPs is growing. One outlet

is the international trade fair Natural Products Expo held each year in the fall on the East Coast or in the spring on the West Coast. This Expo hosts over 3,000 producers and more than 45,000 buyers of natural products from not just North America but from around the world.

The industry has matured from a marketing sense. It realizes the importance of consistent product quality, packaging, and consumer's need for ample product information. In North America, establishing a MAP product certification program is now being discussed – it is a new avenue by which some feel the sustainability of MAP resources may be assured (Robbins 2000). Both authors have participated in initial exploration of the certification of Ginseng. Those who are environmentally concerned to purchase increasing amounts of natural products should be concerned about MAP conservation and would embrace a MAP certification program.

Constraints to sustainable MAP management

There are several constraints to sustainable MAP management that warrant mentioning. First and foremost, the harvest of MAPs is yet to be an issue of public concern. This precludes the attention needed to focus policy. Secondly there is a lack of information and knowledge on the growth and management of many MAPs. In addition, there is no legislative mandate to preserve

genetic resources. Hence few guidelines exist that would direct policy formulation or assist in adding MAPs to forest management plans.

Most managers of forests (state or private owned) lack the skills and expertise to know and manage MAPs. Knowledge of how fast each species will regenerate is key before managers can prescribe management regimes. Often there are greater demands on managers to manage recreation, timber or watersheds for volume and quality of water.

Lastly, there is no funding mechanism for specific research into the plants, their ecology, uses (as medicines etc.) and their management in the wild or on farms. Several federal agencies including the USDA's Department of Agriculture and Forest Service have fostered some research for a few specific MAPs. But greater support is to assure the identification and sustainable management of key MAPs. Clearly there is need to organize a thorough comprehensive research effort. The eastern region of North America has a long history of MAP harvest and use. However, details are needed about habitat, on the ground inventory, and harvest levels. Without such an ongoing research program that builds on the wealth but accelerates disappearing anecdotal knowledge.

What is needed?

The information and knowledge represented by the experts in this

gathering is notable. Herein lie answers to many of the questions asked of you. Beyond that there should be an effort to build awareness on the part of the public in the use and sustainable management of MAPs.

By building this awareness, you need to develop a vocal and visual constituency that supports the use of MAPs and protects for wise use MAP resources. This effort will demonstrate the value of these resources not just to the general well being of the population, and but also the great positive impact on sustainable forest management and biodiversity that increased management of these resources give. This recognition is not wide spread. Several other regions in the world have not assessed or emphasized the impact of these resources. Your region has a long-standing history and much knowledge has already been gathered and cataloged.

Remember the three standards of sustainable development: ecological, economic, and social or cultural aspects of use and management of renewable resources. MAPs are truly renewable and this message needs to come out in packaging, articles such as in the popular press and through any public vehicle you may have access to.

There is great need to develop and extend to MAP field workers appropriate management practices. These should include how to determine current and projected inventory levels, monitoring for sustainable harvest, handling and storage, and, where native populations are

threatened, appropriate culture techniques.

Management and utilization of MAPs

Local producers will gain much from better market knowledge-helping them to make management decisions. With improved marketing knowledge there is sometimes risk of over harvest and loss of resources. However, with proper management techniques and knowledge of the resource and how quickly it replenishes itself, fear of over exploitation should be lessened.

There is also need to learn more about the legal and institutional aspects of MAP trade. Increased understanding of flow of products through marketing channels and market trends would help MAP producers sense market changes and more effectively plans production activities. This greater knowledge of market trends would also help policy makers and enforcement personnel track legal and illegal trade, better understand the impacts of policies and effects of law enforcement efforts. It is important to learn more about how harvest bans or moratoriums impact the market and the resource.

To increase incomes and opportunities for local level enterprises it is vital to increase market transparency. All players along the market chain need to realize the changes that occur and the value added at each level. To do this one needs to identify and profile all the key

stakeholders along the chain (such as harvesters, middlemen, and consumers). Once the market is better known it will be easier for producers and processors to set priorities. Improved packaging, labeling, product uniformity, and consistent quality and increased income will result. Based on MAPs' values and inventory trends, we need to propose areas that need attention of policy makers. Once this information is known, it will be relatively easy to determine new products and value addition strategies. These lessons are true here in Asia, as they are in other regions.

Common issues to increase the priority given to MAPs

There are several issues that have common value between the two regions. How do the MAP products show value at the local, regional and national market potential. Before MAPs can be further appreciated there is a need for a vocal and visual constituency in support of these products and their management. There is great need to organize and promote a vocal constituency that can communicate concern for the resource and access to market authorities.

Since often these wild crafted herbs come from government lands or are poached from private lands, a key question is how to ensure legal and equitable access for harvesting? What is the impact of greater harvest levels on markets? There is a dire need to demonstrate impact of harvest on the resources. How can one suggest

sustainable harvesting without knowing what the resource is capable of producing? In order to manage the resource, we must first better equip ourselves to know the ecology of these plants. What are the sustainable harvest levels and practices? How to enforce harvest regulations?

Research and Development Needs

It is important to define, track and estimate markets for MAP products. To facilitate sustainable growth of MAP markets tracking and trend analysis of markets is needed. Producers need up-to-date market information, and sound scientific knowledge about the plants and the resources. It is important to integrate analysis of biology, ecology and socio-economy of MAPs. This integration will add greatly to the utility of the results gained. This information would better serve farmers and foresters. The specific needs for documentation of current knowledge are changing. Demographic and ethnographic studies are needed that help identify the local dependence on MAP resources. The best way to gather this information is through participatory (community-based) research.

What is needed for conservation and sustainable development? Information on the species (number, range, ecology), market information (size, quality needs), species inventory, monitoring, and management, and cultivation and enrichment technologies for MAPs is critical.

There are several questions that need to be addressed before MAPs will attain increased priority. What is their value? What is the local, regional, and national market potential? Who are the clients for MAP research? Are they landowners, the MAP conservation NGO, the extension agent, and forest landowners? Are there others? Each stakeholder group will have a different and evolving set of information needs. It is important that we learn these needs.

Who needs improved MAP cultivation and utilization technologies? What is needed is an organized and vocal constituency that supports the conservation of MAP species and encouragement (incentives for MAP cultivation and increased use). MAPs can be sustainable and locally grown, but this message needs to be communicated those who may slow or stop our efforts to utilize these valuable resources. These are key questions that may affect the sustainable development of MAPs in all regions.

We have been discussing sustainable use and management of our natural resources in many venues. Perhaps key question that needs addressing is what impact does MAP harvest have on forest health? There is great need to discover the true impact of MAP harvest and use on the forest ecosystem and the incomes of local forest users. How might you ensure the equitable use and access of MAP resources and the benefits from their harvest, processing, use and sale?

Let us not be blinded by the value of these products, but look at how to manage the resource so that it will provide incomes well into the future. Let us first know to manage forests for continued or increased access to MAP resources. What are the sustainable harvest levels and practices? Once determined what policies should be developed and put in place, the local officials can implement the enforcement of regulations-especially those that will help ensure the livelihood of MAP producers, and other villagers.

Conclusions

Are there lessons from North America for sustainable MAP production? We feel that we should leave this question to you. Hopefully you have seen some of what we feel there to be learned from North America. To raise awareness about MAPs and to help ensure that supplies will be sustained, we all need to learn much about the cultivation, use, and conservation of MAPs in this region.

However, the real lessons need to be learned right here in the region! While all stakeholders in this process play important roles, much can be learned outside the lab or academic community. Listen as your colleagues speak and as farmers and landowners share what they have learned through years of valuable experience. Here you have a wealth of information worth sharing among yourselves. Write down how MAPs are used and can be conserved before the memory of these practices is lost. In this context,

proper documentation of value addition of indigenous knowledge is important. Nepal and the region have a rich heritage, which needs to be preserved and fostered for its sustained growth. From this rich wealth of knowledge, the rest of the world can gain insight. But to gain from this all we must document, store, and share MAP information. Such sharing here at this gathering will help this region grow stronger in the production of MAP. As the world market is not getting smaller, sharing information on MAPs with those outside the region will help you predict market changes and market expansion.

Finally, thank you for allowing us to participate in this important seminar and workshop. As the Secretary and others said during the inauguration of this event, the sustainable development of MAP resources is critical to the long-term health of the region's forests and to the livelihood of those living in or near the forests.

The lessons learned here will help increase the recognition of the importance of MAPs and their value in the region. We hope to learn much during the workshop, which we will share when we return to North America. Clearly, the real lessons to be learned are right here in this room. Please share and learn in the coming days, and work together across the various regions represented here so that we know that results of hard work will help all those interested in conserving and utilizing this rich heritage.

We welcome your comments and suggestions. We hope that this discussion

will continue. The wealth of the MAP resource and all those who benefit from its wise management and use will gain much from your deliberations here. We appreciate this opportunity and look forward to hearing of great results from this meeting.

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