

# Assessing and Developing New Markets For Ethnobotanicals and General Medicinals<sup>1</sup>

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**ABSTRACT:** The Natural Products marketplace is full of new ideas and new products as it expands at a booming 20% rate and \$4 billion per year. So you begin thinking, where can I enter the market? What market niche may prove to be profitable? Which supports my personal belief system of sustainability of biological and cultural diversity? This niche may be ethnobotanical-based natural products. Through the discipline of ethnobotany there is a potential to introduce ethical products that can sustain both biological and cultural systems. This paper examines more current trends and future possibilities & describes case studies in Tibet, Ghana, Peru, & the U.S.

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## Introduction

To assess and develop a new market, we need to look at the current market as a significant number on the measuring stick. Six years ago I attended a conference on sustainable forestry and was surprised that only one presentation was on non-timber, in which she actually had to define NTFP. Then I attended another conference on Forestry and Communities. These were mostly presentations from native north and south American peoples. The discussion focused on all the failures with outside funded forestry programs. Again, no one spoke about the role of plants in the forest. However, within a short time we have progressed well and are now at another junction or divergence on our trajectory to sustain, through use, our forests and those who live within them. So where are we going, what are the possibilities, where is the intersection between our natural systems and our market economy? In response to these questions, this presentation will take a glimpse of the current market, a definition of ethnobotany with some example of ethnobotanical projects that are successful in the marketplace, and how this relates to agroforestry. I hope that you will be able to take home the message that the marketplace is competitive, volatile, and can be very profitable without compromising biological and cultural diversity.

## The Current Market

The 1998 market is estimated to be \$4-7 billion and expanding at over 20% annually. This is just the herbal portion, not the vitamin and food products often associated with the botanicals segment. The market is comprised of farmers, brokers, manufacturers and their support people, native people, healers, academicians, all competing for the same piece of the

pie. But which piece and how can each one of these specialists offer something unique? As the industry has grown it has created new needs. With this success funds have become available to lobby for legislation to allow for greater freedom of expression and sales. Although limited, we have made headway. This increase in consumer base garnishes profits that are beginning to trickle down from marketing to R&D. We are beginning to see more analytical methods, more horticultural research, some biology and even, amazing as it seems, some botany. Concurrently, there have been new faces within the industry, pharmacies buying products, pharmaceutical companies selling and buying, and now foreign and domestic extractors. This last category is very new and is so overwhelmed that they are continually over-capacity. What does all this mean? Room for more. The industry is taking a look at itself and finding its strengths and weaknesses. Yes, it is time to look at new products. Due to the rapid expansion and competent and competitive market, people are trying to find how they can take a larger piece of the pie. How many echinacea or saw palmetto products can one person place on the shelves? Well, we are beginning to find out. But what about different plants-how many of them can you place on the shelf?

The natural products industry in the US has been modeled on European philosophy. It usually consists of single herbs delivered in either aqueous/alcohol tinctures, teas or gelatin capsules. We have shared our American herbs such as Echinacea with the European, as most of our plants have been naturalized and now share a common pharmacopeia. So what are the next steps? Some are trying to find unique ways to use the current plants. For example the aerial portions of *Echinacea pupurea* are now being shown to be as effective as the roots of *E. angustifolia*. Others are

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experimenting with delivery systems. This has gained some price points but, I think this is where ethnobotany and other new botanicals may gain margins.

## **Ethnobotany**

Ethnobotany is a multidisciplinary science defined as the interaction between plants and people. The relationship between plants and human cultures is not limited to maintaining health care, but also includes plants used as foods, for clothing, religious ceremonies, ornamentation, or for shelter (Schultes 1992). Ethnobotany can be more than a simple listing of plants in use in a community. It can be imbedded in the belief system of the culture. Plants are vehicles to understand the forest spirits, as vehicles to find the balance within the body to heal, are ways to protect the family and provide good luck and prosperity to the community. Native communities have performed field trials and biological studies on formulas for centuries.

When performing ethnobotany fieldwork, it is necessary to develop appropriate relationships to initiate your entry into the country, community, village, or home of the healer. Permission must be granted and ceremonial procedures often need to take place prior to the research. While this is in process the research team needs to be established. It often consists of an ethnobotanist, a medical doctor if medicine is your focus, an in-country liaison and an in-country botanist. This team varies depending on your focus. Once the team is complete and permission had been granted, then you must identify the healers. Often there are several within a village, depending on the culture, but the powerful healers will be obvious once the interview process begins. During the interviews it is important to record all the data. This data includes name of person, location, language, plant name and common name, posology, preparation, etc. this data will be most important later when formulating the products. This data should also include ecology information for future collections. If the plant is rare, then it can not be considered for production before sustainable measures can be introduced. Data about the growth habit, etc. should also be recorded. Once the primary information is available then it can be reviewed in the home office and evaluated according to the priorities of the project.

## **Challenges for the Market**

When developing the products it is important that the

healer's information is brought through the process and to the consumer in the form of the extract. If the extract is not prepared as first recorded in the field, it may not be active. For example, if the healer requires ash to be added to the formulas, normally modern companies do not do that. But if it was understood that by adding ashes makes the alkaloids available, and that is the active compound, then ashes it is. When we separate the intellectual property from the remedy, the formula often becomes ineffective. This is one of the challenges of using ethnobotanically- based products in the US market.

A second challenge is the introduction of formulas into the US market. Most, if not all traditionally used remedies are multicomponential. The U.S. market, being modeled on European herbalism, is mostly single herb products. This suggests a big shift is necessary in the U.S. marketplace. There are many reasons why a disease occurs, and when it does it affects the body in many ways. So, to the native person it is normal to have several plants working synergistically to eliminate an imbalance or disease within the body. The U.S. market is beginning to open to multiple plant formulas.

Traditional formulas contain new botanicals. It is a challenge to educate consumers, retailers, and government agencies about new ingredients. For example, when Celestial Seasonings Tea Company introduced Red Zinger who knew what hibiscus was? Who knew what Echinacea was or any other Specialty Forest Product a few years ago?

I believe that it will be easy to overcome the challenge of introducing traditional formulas. The market place is ripe in many ways for these types of products. People are more aware of medical systems and the wholistic approach of native healing systems. Sociologically they are also ready. Because U.S. consumers have been removed from their family communities, the romantic ideals of what native communities suggest gives consumers a desire to buy these products. They perceive the products as a means to belong and are enticed by the romance behind the source of the plants and the people with whom the formulas reside. Most products give the consumer the impression that they are supporting the preservation of

biological diversity. This aspect of traditional products is an excellent marketing tool, but we need to be accountable. We do not want consumers to support processes that are actually eroding cultural and biological diversity. We also do not want to seduce native people with our marketing systems & yet remain subservient to our market economy. These relationships are precious and are highlighted later in this presentation when discussing intellectual property rights.

A third challenge is determining with whom you will work. If you work with an individual who has some familiarity with the market economy you can get the project off the ground. If your only option is working with a indigenous federation or community, then the process will take longer. Many of these people are removed from urban life and introduction into market economy will require experience and time. The process requires that you familiarize people with a market economy. This can take several months to a year.

The fourth challenge is that in the natural products industry intellectual property is not regularly compensated. Most of the time it is usually not an issue because manufacturers request specific materials. Where intellectual property is being procured without compensation is in the published literature and when using traditional formulas. Some may think this is public domain and in many cases it is. Often the information is taken and used in the marketing of a product without regard for including the scientific aspects of the research that make the product superior.

The challenges also arises in the field when determining how share the profits. Many projects are initiated only after letters of intent or Memorandum of Understanding, MOUs, have been signed. Then after agreements have been acknowledged you can enter into the field. During the fieldwork immediate intellectual property is exchanged and equitable compensation is required. Small things like medical supplies that do not undermine the traditional healing systems, food, clothing, desks, typewriters or other school supplies may be of value to the village. You will only know what would be of value to them when you ask what you can offer as compensation. The issue then arises of how profits should be returned? Should trusts be set up? Who should distribute the profits, to whom, federations, communities, individuals? These are all creative team processes that vary with each culture and person with whom you are working.

The final challenge is that of supply. Here is where we begin our overlap with agroforestry systems. Several cases studies will be presented here.

### *Tibet*

In Tibet, or what is called China today, there are companies manufacturing Tibetan herbal remedies. China did not have a market economy until recently, and the addition of sales promotions like advertising are relatively new. With this new ability to move more products it is now necessary to understand the supply lines. There may be enough for commercial products, but would there be any left for the local people? Tibetan medicine is predominately from the Tibetan region where the majority of the habitat is alpine. The vegetation is limited due to the weather restrictions and mountainous terrain. So we are currently working together to train field personnel, the collectors which in this case are the Doctors, to study the plant populations to the extent that we can understand the harvesting profiles. With this understanding we can determine if we have to supplement supply. Can we manage and encourage more growth within wild populations? Maybe, but we would have to perform feasibility studies to be sure. A simple study was be designed. The region is often hard to access and only accessible during the summer months. A 20X20M plot was chosen within a harvesting area. The plots were randomly subdivided and assigned harvesting percentages. The individual desired species within each plot were counted and corresponding percentages were harvested. These desired, harvested medicinal parts of the plant were dried according to the doctors and will be tested as baselines for the comparison to the next season's collections. The plots were duplicated in two other locations and the same grids and collections made. In addition to preserving the species, as well as local supply, this process was a form of technology transfer. The doctors will now be able to implement these whenever and wherever possible. This also creates new livelihoods for the local people either as field assistants or as cultivators.

With the results of this study, we will know the limits of increased pressures on the land. With this in hand, local people will be able to decide how to proceed. Land surrounding the villages is communally owned and with the purchase of a fence they may be able to transplant and germinate plants that will provide a sustainable supply. This then leads to another area of investigation in which we would study-seed collection, viability and cultivation. As a team they can realize a

mutually successful project.

### *United States*

Helishwa, makers of River of Grass products, is 50% owned by the Seminole Tribe of Florida. The Seminoles are investing in this project to diversify their portfolio. The Seminoles are supporting a team of consultants, ethnobotanists, pharmacists, clinical herbalists, and traditional healers to identify and market natural products. The products are traditionally used and the raw materials are purchased from the in origin. This provides immediate compensation. After profits are made then 50% is returned to the collaborators and 50% is shared between Helishwa and the Seminole tribe. During the process of manufacturing the products, liaisons are forged with non-government organization and academic institutions. These others intercede as support for quality assurance, for biological and chemical research, and for sustainable supply of raw materials within agroforestry systems. In most cases, the raw materials are wild harvested and the NGOs are working with community members to investigate if this is sustainable, if there are ways that cultivation may be profitable for all parties, and if there are other needs that should be addressed. This is a continual process. The problems here are that monies are not available until after the products are in place. We need to develop the supply chain before profits are released to the communities. With profits, the parent company can offer assistance with feasibility studies.

### *Ghana, West Africa*

One example that differs from the others is the brokering of raw materials. Once in a while a single plant may be identified as having potential in the marketplace. It has been used traditionally and now has found a niche in the U.S. market. In the case of *Griffonia simplicifolia*, entrepreneurs, academicians, and NGOs have worked together to provide a sustainable supply. The product contains a compound of interest. The water content of the plant affects the quality so a drying system was required. We polled efforts and found the appropriate percentage moisture, how to test for that percentage and a drying procedure. We are working to map wild populations to determine best location times for the harvesting. We are comparing the habit of the plant in various ecosystems to find the best collection populations and areas for cultivation studies. And finally we are working with communities to understand their needs as participants in this process. Again we must include intellectual

property. What do the people need? In this case, it was long-sleeved shirts while harvesting. The areas contain many plants with stickers and the long sleeves were a big improvement.

### *Peru*

In Peru we identified a tree from which a latex was medicinally valuable. After the information on the plant was gathered, market research to verify a domestic interest in this crop was completed. This is important because if the investing foreign partner was to change their priorities and leave the project, then the local economy would not suffer. Instead they would have an opportunity to establish their own market. The villagers normally make slashes in the bark and collect 1—20 ml of the sap. Unlike maple and rubber, these trees cannot be tapped. After much study the best way was to cut the tree down make as many incisions as possible within the venous system of the tree. Then we could collect a greater amount of the sap into small saucer cups made from other plants. This was then transported to the US. The felling of the trees was ecologically beneficial in that 600,000 seeds fell from the tree annually. These seeds, when given light, would germinate. Therefore, with the felling of trees in various locations within the forest, this offered reproductive opportunities. The natural light that would reach the forest floor would provide for understory growth until the trees would fill in the gaps again. Compensation agreements were implemented at various times within the making available monthly budgets for reforestation. There was always an acknowledgment of the need to preserve the forest while extracting materials. These funds were dedicated to germination studies, studies on the basic biology of the tree of interest and other associated species that appeared to have affect on trees' growth. In addition data on pollination and predators, social and, soil studies were completed.

But can we cultivate everything? There are no studies on many of these wild plants, US or otherwise. We need viability studies, germination studies, planting studies and more. We also need to understand the sociological effect of removing demand from wild harvested plants. How does this affect local people, the stewards of the plant population. What happens to the wild populations? What happens to the attention to preserving wild plant populations if we cultivate everything? Are we preserving genetic diversity or losing it if we switch entirely to cultivation? We still have a lot to think about.

Through these case studies I hope to demonstrate how ethnobotanically sourced products have entered the marketplace successfully and how they include sustainable supply as part of this process. In all of these case studies, there were issues of products to new markets, funds returned for sustainability whether it is biological or cultural, and scientific investigation of the habit and environment of the new commodities that would assure their long-term supply. Ethnobotany has a positive role in the development of new products as they affect our natural habitats. They are a positive means to study those forests and replenish them as they offer us our health.

I want to thank all the native people who have taught me about the land and their cultures as they struggle, through self determination to remain close to the land.

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