Ethnobotany and the Loss of Traditional Knowledge in the 21st Century

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Editorial

Since the beginning of the discipline, ethnobotanists have been concerned with the threat to traditional cultures and their knowledge of plant uses and relationships. Over the last three decades of the past century, work was centered on the need to catalogue knowledge of plants in a race with the fast disappearing of natural resources, primarily Tropical Forests. It was clear then, as it is clear now, that there is a close correlation between the destruction of tropical forests and other ecosystems and the decrease of biological diversity as well as cultural loss. Many ethnobotanists ventured to far away places to catalogue all the plants indigenous people used in their everyday lives before their ecosystems were converted to cattle ranges, oil fields or monoculture plantations. After hard work in places like the Amazon Basin and Mesoamerica, several scientists (Alcorn 1984, Boom 1996, Schultes 1973, Spruce 1970) produced detailed works that set the stage for the next generation of ethnobotanists.

As ethnobotany matured, scientists asked more complex questions. But the issues remain the same today: traditional knowledge is being lost throughout the world. The reasons for this phenomenon vary from place to place but there are similar trends in tropical countries where urbanites are moving to areas historically inhabited by indigenous people. Tropical “paradises” are becoming shopping malls and retirement complexes that include their own golf courses and other amenities that replace the native tropical vegetation. This trend is the leading cause of biodiversity loss in places like Panama. In other countries like El Salvador, urbanization is the principal cause for deforestation and the little still remaining tropical forest is giving way to manicured tourist attractions and to housing developments.

Today’s tourism is broad and if properly managed can have positive effects on local communities. We have seen many good examples of ecotourism and its benefits. In some cases, however, it has negatively impacted local communities. Indigenous people have often had little or no input in its implementation and the results have been devastating both on the environment and on biocultural diversity. One trend that has developed in recent years is tourism for experiencing psychotropic plants in places like the Amazon. In this case, the result has been an abuse and over-collection of sacred ceremonial plants like **ayahuasca** (*Banisteriopsis caapi* (Griseb.) Morton, Malpigiaceae) and its adjunct ingredient, **chacruna** (*Psychotria viridis* Ruís & Pavón, Rubiaceae). During my last trip to Peruvian Amazon this past January (2007), local shamans and biologists indicated that these important plants for shamanism are scarce and that to collect them people have to walk long distances. They agreed that the increase of this type of tourism has lead to low availability of these plants. This trend is also taking place in temperate and boreal ecosystems where golf courses and casinos are replacing the natural ecosystems. A good example is the case of the Black Ash (*Fraxinus nigra* Marshall, Oleaceae) used by the Mohawk people for basketry. This tree is harder and harder to find within their reservation in Northern New York State where it is being removed..

Development is part of our societies and every nation, community, or neighborhood wants progress. Obviously, everyone has a different notion of what development is and what its role is in our societies. No scientist can be totally against development because we benefit from it: technology, access to our study sites, and other products of development. However, we need to be alert about how this development can be used to take away other peo-

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ple's rights, particularly the biocultural rights to natural and social resources. For this reason, using development in a positive way to empower indigenous people can only benefit those with interests in ethnobiology because if diverse indigenous cultures survive, there will always be people to learn from or exchange ethnobiological knowledge.

In this editorial, I intend to point out how development is threatening the survival of traditional cultures and ethnic groups. I also intend to present its effects on traditional environmental knowledge and then focus on the possible role today's ethnobotanists can play to stop or slow down this disturbing cultural phenomenon. It is important to understand that stopping development or tourism is not the answer to these issues but rather finding common goals in these enterprises. In this regard, I propose that these ideas be used as starting points for further discussion.

I base the following points on my travels, visits, collaboration and fieldwork as an ethnobotanist throughout the Neotropics and North America. For this reason, some of these points may be more relevant to the Americas than to the Paleotropical indigenous communities. Nevertheless, other parts of the world may have or are experiencing similar changes and traditional knowledge systems are just as threatened everywhere else in the world.

I. Traditional knowledge is being lost due to rapid development in many areas where indigenous people live.

Rapid changes are taking place in areas where indigenous people live. Although they may have lived in a given place for generations, they generally lack titles to the land and do not have monetary resources to legally defend their rights. They tend to be at a disadvantage because in many countries legal issues relating to land tenure are resolved in the country's capital and they lack the resources to travel there and to hire experts to defend them. Unlike in some countries, the governments in most developing nations do not provide services to assist these people in legal processes.

II. Indigenous people are being displaced to make room for development projects like tourism and retirement communities.

This trend is evident in Panama where housing developments for retirees from developed countries like the United States and Canada are displacing indigenous families. On Isla Colon, Panama for example, indigenous families who have lived for decades on a piece of land one day found themselves living on a public beach because the land had been acquired for a development project.

III. Indigenous people are being forced to move from long inhabited lands to more pristine forested areas, including protected lands.

Indigenous people who are displaced by tourist development or new ownership of the land have no other choice if they want to continue their rural lifestyles and cultures but to move to forested lands, including protected natural areas. Eastern Panama is facing this phenomenon. In countries like El Salvador, the most productive lands are being converted to free trade and industrial parks. As these are established, new housing developments are created near them. In this case the people who lived in the area have to move to less productive lands and cut down the little vegetation still left in the country.

IV. There are no programs to coordinate the fast purchasing of lands by foreigners and their impact on the local communities.

It is common today to read in newspapers and billboards throughout Central America advertisements for lands for sale. The purchases take place in large cities like Panama, or San Salvador and the new owners have no idea about the implications of buying land in "pristine" (undeveloped) places where people have lived for many years and where families have made them their homes for generations. There are no checks or balances to reduce the negative impact of selling land in places where there is evidence of high biological diversity and where entire cultures exist who are dependent on these environments.

Potential contribution by the Society for Economic Botany to slow or reverse this Loss of Traditional Knowledge

1. **Promote collaborations with indigenous people: this has been done but in a very passive way.** Most projects include indigenous people as informants or consultants and not as collaborators. We need to make an effort to include indigenous people as an integral part of our projects. There is a need to give them credits not just in the acknowledgements but as co-authors of our publications the same way we may include students or academic collaborators who assist us in the field or in the laboratory.

2. **Help Indigenous communities map their lands to identify critical sites for their cultural survival.** We need to identify sites that house wild varieties of crop plants, medicinal plants, and other important plant resources, including ceremonial sites. In Hawaii this was the issue that the family that hosted a few of us who stayed after Building Bridges conference in 2001 said they needed done. By mapping their lands, indigenous people are empowered with evidence of ownership. This is even more powerful if the maps include details about wildlife important for their survival. In many cases these lands are home to endemic species, medicinal plants, ceremonial plants and even archeological sites never reported. The knowl-

edge of biodiversity by indigenous people erodes as access to their resources is limited or when biodiversity decreases. There is clear evidence that if people do not interact with nature, the knowledge about it decreases in a few generations (Yates & Ramirez-Sosa 2001). This is the case in El Salvador, where in a decade I have documented a decrease of about 50% of ethnobotanical knowledge in rural and urban population (Ramirez-Sosa 2006). In Boca del Toro, Panama, school children cited Coca Cola as the best remedy for several stomach problems.

3. **Work with young members of communities and establish long term collaboration projects that can be carried on by them.** Generally, we want to work with the elders of a community because they possess the greatest knowledge about plants and animals and the environment. By doing this, we segregate and marginalize the younger members of the community and in some cases these young people are only included in our projects as carriers, collectors, guides or as company. We tend not to include young people in the entire process of establishing projects or even in the designing of projects. This is despite the fact that young members of the community are the ones that will live for a long time and can follow up any study planned for a long-term period.

4. **Promote the exchange of knowledge and ideas between communities and scientists by hosting community members in some of our meetings.** This should include not just the elders but young people so they can go back to their communities and inform them about their experience. Selection of participants in external training can be tricky. Selection of individuals can lead to internal problems within a community and perceptions of favoritism by some members. Perhaps, the best way is to alternate the choice of participants. I believe that this can best be done with the assistance of community leaders.

5. **Promote the writing of opinions or letters in our publications (i.e. *Ethnobotany Research and Application* Editorial, or *Economic Botany* Newsletter) by indigenous people.** This gives them a sense of belonging and respect. Some of us can volunteer to translate. Indigenous people hardly ever have a voice in the conservation movement or in research projects. This is evident by their absence at meetings and as authors in publications (popular or specialized). We can also change this *status quo* by inviting them to become co-authors in our publications when they have played significant roles in our projects.

6. **Take advantage of indigenous people's skills.** Do not just use people for collecting and identifying plants but also recognize them for their artistic or pedagogic knowledge. For examples this can be done when teaching courses abroad by involving local community members to demonstrate their skill in making artifacts like extracting plant fibers, dying them with natural dyes and basket weaving. Learning directly from weavers can be transforming for students and teachers and in the end provides an extra income to community members.

7. **Educate the next generation of ethnobotanists to make every effort to improve our involvement with indigenous communities wherever they conduct their studies.** It is important to start saying, "we are here to study WITH you" instead of "we are here to study you and your culture."

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