Indigenous Knowledge

Incorporating local knowledge into project activities can reduce the risks associated with relying on outside technology and with adopting alternative resource use techniques and practices.

Indigenous knowledge can be defined as a set of perceptions, information, and behaviors that guide local community members' uses of land and natural resources. Indigenous knowledge is created and sustained by local community members as a means to meet their needs for food, shelter, health, spirituality, and savings. Indigenous knowledge is usually adapted and specific to local ecological conditions and to community members' social and economic situations and cultural beliefs. This knowledge can be simple or complex. It is not static, but evolves in response to changing ecological, economic, and sociopolitical circumstances, based on the creativity and innovation of community members and as a result of the influence of other cultures and outside technologies. Indigenous knowledge reflects a set of resource use strategies that may be sustainable in certain contexts, but are not necessarily nor intrinsically so.

RICHARD CARROLL

The local population of a region is an important source of information for conservation projects.

Indigenous knowledge can help promote biodiversity conservation by characterizing resource uses that are appropriate for the particular local landscape. In fact, incorporating indigenous knowledge into conservation and development activities is believed to be an important mechanism for ensuring the most efficient and productive use of natural resources in the short term without jeopardizing

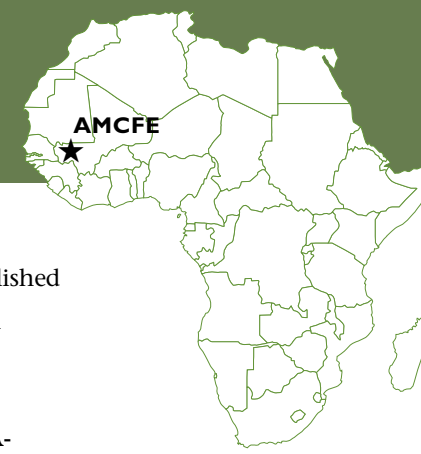
the long-term capacity of nature to continue producing these resources. Yet, indigenous knowledge is often neglected as a key source of policy-relevant information because it is often undervalued relative to Western scientific knowledge, both by nonlocal project managers and local communities themselves. Learning about and making use of local knowledge helps confirm the value and importance of such knowledge and facilitates its integration into resource management policies and practices.

Observations from the Field

The **AMCFE** and **GACON** projects were founded solely on the desire to support and foster indigenous knowledge systems that remain responsible for maintaining biodiversity within lived-in landscapes in regions of Mali and Ghana. The Peregrine Fund's **MADAGASCAR WETLANDS** project relied on indigenous knowledge and customary authority (Tompondrano) to determine when it was appropriate to open and close fishing seasons. In this way, local experience and concerns of the community were incorporated into an aquatic resource management system of the project as it attempted to balance local needs with biodiversity conservation.

The Association Malienne pour la conservation de la faune et de l'environnement (AMCFE) is coordinating a project on multiple-use plant species in the Boucle du Baoulé Biosphere Reserve. The goals of the project are to identify key medicinal species document indigenous knowledge regarding the use and ecology of these species conduct chemical analyses and treatment efficacy tests on specimens of medicinal plants and train village leaders and ensure the participation of villagers in the production, protection, and sustainable use of these medicinal plants.

To learn more about the AMCFE project, see page 70.



In Kenya, the **KENGO** project could not have achieved its goal of conserving locally adapted varieties of vegetables and tree crops were it not for the rural women's knowledge of the most appropriate techniques for their cultivation and irrigation. The tree crop nurseries that were established by the project relied on indigenous techniques to determine the optimum growth conditions for the seedlings.

The ecotourism, public health, and research components of the **DZANGA-SANGHA** project in CAR could not have existed without the indigenous knowledge of the Ba'Aka people and villager populations. Ba'Aka men and women's knowledge of the forest allows them to guide visitors through a tropical forest that, to the uninitiated, appears green but barren; with the aid of Ba'Aka interpreters it is shown to be an extraordinarily diverse source of food, medicines, and building materials. Ba'Aka men and women know of a wild vine that, when shredded and applied as a paste, can kill the skin parasite *Tunga penetrans* that, in

the simplest cases, causes painful lesions around the toes and, in the worst cases, results in severe deformities of the feet. With no comparable Western medicine, indigenous knowledge was critical to the success of one of the project's public health activities. Lastly, were it not for the forest knowledge of the Ba'Aka people and villagers who were employed as research assistants, it is unlikely that the Western researchers studying gorillas, viverids, elephants, and trees would have accomplished much within the short time usually allocated for such projects.

Similarly, the **LIFE** project in Namibia relied on women's knowledge about which parts of palm leaves could be harvested for baskets without negatively affecting the regeneration of the mother plant. The women also specified the frequency, season, and height for cutting thatch grass to optimize its productivity. The **NATURAMA** project at Kaboré Tambi National Park in Burkina Faso used traditional communication channels (stories told by griots), in combination with the knowledge of the villagers on the Nazinon River, to develop and implement a fishing management plan for the area.

Ghana Association for the Conservation of Nature (GACON) coordinates the Sacred Grove and Biodiversity Conservation project in Ghana. The project's goals are to conserve biodiversity by protecting local reserves of remnant forests using participatory approaches and sensitization of grassroots communities prevent illegal logging, intensive exploitation of wildlife, and bushfires in the groves and strengthen the traditional laws and taboos governing the use of sacred groves.

To learn more about the GACON project, see page 76.

Conclusions

Though an aim of all these projects was to make effective use of and help in retaining indigenous knowledge, the observations of the BIOME participants show that the reasons for incorporating indigenous knowledge into projects varied considerably. In the case of the **LIFE** (Namibia) and **KENGO** (Kenya) projects, the rural population within the project highlighted how their knowledge could be useful in the implementation of the development and conservation activities. In the case of **GACON** (Ghana) and **AMCFE** (Mali), it was the outside initiators of the project who decided to use the knowledge and authority of traditional chiefs and traditional healers to encourage conservation of natural resources. Sometimes project organizers only made use of the rural community knowledge because they could not afford to import costly Western techniques and technologies, or because local solutions had a comparative advantage **(CAMPFIRE, KENGO,** and **NATURAMA).**

Except for the **GACON** and **AMCFE** projects, for which this principle constitutes the project's raison d'être, no project carried out studies to learn about

indigenous knowledge so as to systematize the incorporation of such knowledge into projects to provide sociocultural, economic, and resource conservation benefits. Indigenous knowledge appeared to be incrementally incorporated into projects during the implementation phase. It was thus often a problem-solving rather than a planning tool.

Although indigenous knowledge was often well adjusted to the prevailing biological, economic, and social conditions, BIOME participants noted that local knowledge alone is unlikely to provide all the necessary solutions, given the rapidly changing economic, ecological, and social circumstances of recent decades. Some blending of indigenous and external knowledge is generally needed.

Rather than providing ready-made solutions that extension agents are asked to "sell" to farmers, BIOME projects such as **NATURAMA** and **KENGO** show how it is worth using an approach that is more valid when dealing with traditional societies and their production and conservation systems. First, one must understand the local ecological stability of traditional systems of resource management and the indigenous knowledge associated with them. Next, one should use external and local expertise to investigate why these traditional practices are no longer adequate and to identify areas where adjustments are needed. Lastly, it is important to work with local communities to develop potential innovations that solve the problems. Observation of BIOME projects has shown that biodiversity extension workers need to understand ecological concepts and to learn how to analyze problems rather than provide ready-made recipes. They also need to acquire communication skills and willingness to adapt to changing conditions. The latter was observed not to be easy, given African traditions of teaching based on memorizing and accepting unquestioningly what one is taught.

Part of identifying what indigenous knowledge is important to incorporate into a project involves understanding the values of the people involved and what is and is not important to them. The following section explores this idea.