

II Traditional Knowledge and Human Well-Being in the 21st Century

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Abstract: In this chapter, we highlight the most important issues pertaining to traditional knowledge. We see these as 1) intellectual property rights; 2) internal community differentiation; 3) differing epistemologies; 4) potential exchange between multiple use forestry and traditional knowledge systems; and 5) links among knowledge, livelihoods and land. In our view, “traditional knowledge” and “cosmopolitan” or “scientific knowledge” could contribute to each other in a much more constructive way than is now the case – to the benefit of both environmental and human diversity and well-being.

Keywords: Traditional knowledge; indigenous knowledge; epistemology; intellectual property rights; intra-community heterogeneity; multiple use forestry; indigenous technical knowledge; policy.

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II.1 The Importance of Traditional Knowledge

There are two main ways in which traditional knowledge is important to those interested in sustainable development and social justice. One has to do with our interest in expanding the global knowledge base; the other has to do with our interest in contributing to environmental and human well-being. In this chapter, we first discuss the importance of traditional knowledge as a means of enlarging our understanding of local environments. This will be linked to the impacts such “external” attention might have on local communities. We will then discuss some of the issues that emerge as one examines traditional knowledge systems, with some examples of pertinent traditional knowledge and its uses.

Understanding of the potential contribution of traditional or indigenous knowledge has grown in recent years. Beginning modestly with the elicitation of local taxonomies of plants (Conklin 1957), firewood (Metzger and Williams 1966), colors, (Berlin and Kay 1969) and other domains, this field of study has grown to address complex issues like representing the underlying logic of indigenous knowledge on computers (cf. Colfer et al. 1989; Joshi 1997; Sinclair and Walker 1999). *The Indigenous Knowledge Monitor* is a journal devoted entirely to documenting such knowledge. The Intermediate Technology Development Group in the United Kingdom has an

extensive field program of direct community involvement in Asia, Africa, and Latin America, as well as a series called Studies in Indigenous Knowledge and Development. There is a Center for Indigenous Knowledge for Agriculture and Rural Development at Iowa State University in Ames, Iowa. This kind of information has relevance both for understanding local human systems (the anthropological concern), and for linking local people in a more mutually beneficial way with “non-local” actors and institutions (a more pragmatic need related to human well-being and protecting the environment).

Jordan (1997) discusses the difficulties in integrating indigenous knowledge into “mainstream” knowledge. She introduced the concept of “authoritative knowledge.” Those in power have knowledge that is generally recognized as authoritative; the knowledge of those without power is not recognized in this way (cf. Foucault 1980; Escobar 1995; Nygren 1999). This concept is especially relevant to the traditional knowledge of forest peoples in many developing countries (cf. Banuri and Apffel-Marglin 1993).

Expanding our recognition of forest peoples’ detailed knowledge of their environments can serve both to enhance management and to strengthen the voice of local people in making policies more appropriate to their needs and those of the environment. Formal, governmental, and other large-scale resource management has typically been carried out with such managers blissfully unaware of local people’s po-

BOX 11.1 PIGS, PALMS, PRIMATES AND THE PENAN BENALUI HUNTERS

Rajindra Puri

Penan Benalui hunters in Indonesian Borneo use a method of entrapment known as *nedok* to capture their favorite prey species, the bearded pig (*Sus barbatus*). *Nedok* requires the hunter to mimic the movements, sounds and calls of the pig-tailed macaque (*Macaca nemestrina*) as it travels on the ground in search of fruit. The hunters know that pigs will follow the monkeys to find fruit, especially fruit that is only available if picked and dropped by arboreal animals. Hunters, hidden by shrubs or tree trunks, cunningly entice the pigs toward them and when the pigs are close enough they are killed with guns, spears and even machetes. Catching pigs in this manner requires the hunter to remain in character for long periods of time, and the skills of a mimic in moving and sounding just like a monkey. The wrong sound or sequence of calls alarms the pigs and they quickly depart!

Underlying this knowledge of the behavior of animals and their interactions with each other is a deeper understanding of forest ecology and the varying importance of certain food sources from season to season. Monkeys help pigs find fruit when most trees are not fruiting (Borneo's forests are seasonal), and often these include figs and a variety of palm species that fruit seasonally. An important food source for both animals is the hill sago palm (*Eugeissona utilis*), which produces a soft ectocarp

eaten by the macaques and hard oily nuts eaten by the pigs. These sago palms grow in thick groves, known as *birai* to the Penan, and are also managed by Penan and others in Borneo for both palm cabbage and palm stem starch (known as sago), which is the traditional staple starch of all forest foragers in Borneo. Thus, Penan hunters may forgo collecting the pith so that the palm stems will bear fruit, and thereby provide food for animals and thus prey for hunters in a known location, potentially throughout the year. Managing palm groves, in some cases protecting them and actively encouraging vegetative reproduction too, allows hunters the options to use the area for vegetable or animal foods, or both, depending on their seasonal needs. (Puri 1997).

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- Puri, R.K. 1997. Hunting knowledge of the Penan Banalui of East Kalimantan, Indonesia. Ph.D. Thesis, Anthropology; no. 3543, University of Hawaii, Honolulu, Hawaii. 496 p.

tential contribution to their work. We have ignored a huge human resource by not recognizing forest peoples' capabilities to participate in development processes, including the wider use of their knowledge (Clay 1988). Conversely, the wider recognition of the value of such knowledge can contribute dramatically to the self-respect and self-confidence of the people whose knowledge is thus recognized.

Despite the rich literature on the utility of traditional knowledge, some difficult barriers have prevented its widespread use. The most obvious is the fact that much traditional knowledge of forests is available only in a language known by very few people. Forests tend to be sparsely populated, almost by definition, and tropical forests (the kinds about which we, as a global scientific community, know the least) are often inhabited by many small and diverse groups – each speaking a different language. Thus, the well-known problems of translation form a straightforward barrier to access traditional knowledge.

Some kinds of knowledge are easier to access than others. Scott (1998) has written of “metis,” a Greek term, referring to the kinds of knowledge needed to respond to changing circumstances, the kind that involves skill, flexibility, and adaptability, and applies to a particular location. He contrasts this kind of knowledge, embedded in local experience, with the more general, abstract knowledge acknowledged by states and technical agencies. Puri (1997) calls this “performance knowledge” and shows how Penan hunters in Borneo's tropical forests integrate their past experience of hunts and their vast knowledge of wildlife, landscape, tools, and techniques to adapt to a variety of circumstances and thus ensure

a regular catch for their family's subsistence (see Box 11.1).

A less widely recognized but equally daunting problem is that of underlying differences in epistemology, or ways of knowing. Different knowledge systems have different standards and ways of assessing validity. They have different assumptions from which people reason (cf. Leach and Mearns 1996). All of these differences may be important when outsiders want to understand and make use of traditional knowledge.

There are many areas in which traditional knowledge can fruitfully contribute to more “universal” forms of knowledge. Forest dwellers typically have detailed knowledge of the geography of their community's territories; they already work with zoologists, botanists and ecologists, sharing local knowledge of wildlife, plant habitats, seasonal variation, and the like. Anthropologists and economists build on local environmental and other knowledge to fill in their own understanding of ecology, subsistence patterns, division of labor, seasonal variation in income, etc. (Colchester 1981; Posey 1983; Bird-David 1992; Balee 1993; Colfer et al. 2000). The most obvious areas in which forest peoples contribute to western or “cosmopolitan” science derive from their knowledge of medicines, fibers, wood, food, and wildlife, and the habitats, seasons, growth patterns, and nutritional needs of these products and organisms. Much of the knowledge that forest people have of these topics is directly compatible with conventional scientific knowledge, and is in fact often included without much recognition when “modern” scientists analyze and write up their findings about tropical forests. One valuable way forward is the linking of traditional

knowledge with the kinds of knowledge foresters and other environmental scientists have (Clay 1988; Colfer et al. 1997; Donovan and Puri 2004).

There are a number of important issues that emerge when we examine traditional knowledge. We focus on five of them here: 1) intellectual property rights, 2) internal community differentiation, 3) different standards relating to knowledge and validity, 4) multiple use forestry, and 5) traditional knowledge systems and links among knowledge, livelihoods and land. The question of intellectual property rights is a recurrent and thorny one. Whereas stakeholders with power and influence, such as multinational companies, have the capacity to deal effectively with the formal institutions that strive to protect intellectual property, local communities almost never have such capabilities.

11.2 Indigenous Property Rights

Many of the questions about the “intellectual property” of traditional communities are not easily answered. To what degree is a community’s knowledge about the plants and other resources in its territory private? And to what degree should it be? Many indigenous organizations now reject the idea that their knowledge is property, arguing instead for alternative means of securing their rights to their cultural heritage. In a perfect world, knowledge would be shared freely (as indeed many communities have done). However, multinational drug companies sometimes use traditional knowledge to simplify their search for natural substances that they then develop and commercialize with sometimes-obscene profits. Meanwhile the originators of significant parts of that knowledge may receive none of the benefits from their contribution (cf. Dorsey 2003).

Dealing with these questions can raise serious ethical questions. When working on the Kenyah Dayaks’ traditional knowledge system, Colfer asked the people their opinion on the publication of their knowledge. In this case, the people were proud of their knowledge and pleased that others might make use of it. In another case, also in Borneo, she was given access to the individual knowledge of a traditional healer about a forest plant believed to function as a contraceptive, only after undergoing a formal exchange that granted Colfer rights to that knowledge, under their system. Promising to do her best to ensure that any benefits that might come from that knowledge would be returned to the healer, Colfer was confronted with the dilemma of how to determine the value of the product without knowing the trustworthiness of those who might be able to turn the healer’s knowledge into a saleable product. In this case, the issue was never resolved, as the plant was lost when one of the people trying to identify it was involved in an automobile accident.



Daniel Tveau

Woman collecting *Pilostigma reticulatum* pods, they will later sell as high quality animal feed. These pods are a good example of an underutilised resource in the savanna woodlands of Burkina Faso.

Often it is very difficult to identify the “real” owner of traditional knowledge. Similar innovations have been made in different parts of the world, and there has been active sharing of knowledge between different groups throughout the history. For example, the same plant might have been used to heal a certain illness in many different communities. Traditional knowledge tends to be invented, renewed and reinterpreted in a collective way; thus it is often impossible, or even irrelevant, to determine to whom the knowledge belongs.

Traditional knowledge encompasses a wide range of different types of knowledge. Some may relate directly to aspects of the environment. Some may relate less directly, consisting of knowledge about what the environment means to people and how it should be managed. Other knowledge is used to order the way people interrelate and deal with each other, which will in turn affect how they allocate rights and relate to their environment. Such knowledge often encapsulates norms of social interaction and customary values, many of which are deeply embedded in myth, ritual, and religious “symbolism,” often related to plants and animals. For many indigenous peoples, “nature” tells a person how to relate to each other, just as much as people tell each other how to relate to “nature” (Colchester 1982a, 1982b).

Protecting such knowledge is not a simple task. One line of defense promoted by lawyers has been to propose knowledge registers. By putting knowledge clearly into the public domain, it is harder for others to copyright or patent elements of that knowledge for exclusive commercial gain (Nijar 1996). An alternative approach promoted by FAO, through its policy on Farmers’ Rights, is to propose benefit-sharing regimes whereby trust funds are established in an

BOX 11.2 SITUATED KNOWLEDGES AMONG MIGRANT PEASANTS IN NICARAGUA

Anja Nygren

In the migrant communities of Río San Juan, Nicaragua, the characterization of local knowledges as internally uncontested systems arising from a communal commitment to consensus does not hold true. The knowledge systems of these migrant peasants are made up of diverse elements and composed of dynamic articulations between various knowledge systems. The local environmental knowledge includes practices of traditional slash-and-burn agriculture mixed with modern agribusiness, pre-Columbian metaphors of the earth as a symbol of life mixed with postcolonial resistance to Western images of local people's affinity with nature, traditional concepts of soils as hot and cold, mixed with modern insights of soil mineralogy.

Even in the knowledge repertoire of the local healers, significant variation was found as a result of such factors as age, gender, religion, and personal experience. One local healer, Don Sefarino, had constructed his healing practices by combining techniques he learned from his uncle who was an excellent healer, from the Catholic monks in Central Nicaragua, from the indigenous herbalists in the Atlantic Coast, in the training courses organized by the Ministry of Health, when serving as a guide for foreign ethnopharmacologists, and when practicing as a healer in the local communities. His medicinal knowledge thus consisted of a complex repertoire of native herbs and vines, cultivated medicinal plants, and "modern" medicine, with their discrepant epistemologies.

To point out the character of knowledge production as a process, local people themselves used the term *conocer* (to be acquainted with), instead of *saber* (knowing). People's knowledge about the forest could not be seen merely as simple knowledge about useful forest products. It also included symbolic meanings of the forest as an uncultured space, something intact and wild that remained beyond human control. In this regard, the practices of forest utilization and the symbolic significations of environment were intrinsically interwoven. People also transformed their knowledge by means of innovative insights and new epistemologies. In this light, the view of local knowledge as static and inherently opposed to modern knowledge seemed arbitrary. Only by examining the traditional within modernity, and the specific and situational within heterogeneity, could the more profound significance of local knowledge systems be revealed (Nygren 1999).

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effort to ensure that funds flow back to the communities from which innovations flow (Baumann et al. 1996). Some pharmaceutical corporations have promoted this approach through charitable trusts (Moran 1997). However, compensation for knowledge transfers is a much more complicated matter than a simple sharing of economic benefits and profits. Traditional knowledge also has important links to people's social and cultural identity, their rights to livelihood, and their relations to nature, aspects that are difficult to compensate through monetary payments. As a consequence, several researchers have argued that securing indigenous control over territory and recognizing their customary laws are the best lines of defense for protecting traditional knowledge (Simpson 1997; Schroeder 2000). These and other approaches are not mutually exclusive. An emerging consensus is that any efforts to publicize or commercialize traditional knowledge should be based on the principle of free, prior and informed consent.

11.3 Intra-Community Differences in Knowledge

The second challenge related to wider use of traditional knowledge derives from the lack of homogeneity in traditional communities. Getting the formal forestry community to attend to human issues at all has been an uphill battle, and there has been a tendency to consider communities as monolithic groups

of very similar, almost interchangeable people. However, there is a huge amount of diversity both within and among different communities (Agrawal and Gibson 1999). For example, CIFOR has conducted adaptive collaborative management research in four communities in Nepal: the number of major castes and ethnic groups in one, Bamdibhir, is 11; in another, Deurali-Baghedanda, 6 (Dangol et al. 2001). Manakamana, a third site, has 8 ethnic and caste groups, plus 5 households of "other," while Andheribhajana has 9 ethnic/caste groups (Nepal ACM Team 2001). The Nepali government has recognized over 60 groups of indigenous peoples in Nepal, each with different traditional roles, practices, expertise, and associated knowledge.

Even in communities that are ethnically homogeneous, such as a group of Baka pygmies in Cameroon or a village of Guarayo Indians in Bolivia, significant differences related to age, gender, religion, social identity, and political position are reflected in the individuals' levels and types of traditional knowledge. Among the Kenyah of East Kalimantan, women tend to have a fuller repertoire of knowledge about medicinal plants (Leaman et al. 1991); men know more about the behavior of forest animals (Puri 1997). Both sexes are good at finding forest foods, "shopping" opportunistically in the forest on the way home from other activities. In many Central American rural communities, the knowledge of timber products is considered a specialty of men, because of the perception of the forest as a place that remains outside the range of women's activities. The women's special

BOX 11.3 THE AMATE PAPER OF MEXICO'S OTOMI PEOPLES

Citlalli Lopez

Amate paper made from bark has been manufactured in Mexico since pre-Hispanic times (ca. 300 A.D.) when it was regularly used for many purposes – ritual offerings, priestly attire, payment of tribute, and as a surface for the elaboration of codices. Although its production was banned during the Spanish colonization, clandestine manufacture and use continued among the Otomi people living in the Sierra Norte de Puebla. In the 1960s, the Otomi started to sell their *amate* production as a handicraft. Today *amate* paper is one of the most widely distributed Mexican handicrafts at national and international levels, whilst within the Otomi village it continues to be used for traditional rituals.

For the Otomi, *amate* paper, trees and the landscape are linked. Within the rough landscape surrounding the Otomi village, the remaining forest patches are found at the top of mountains and hills, seen as the keepers of the “seeds” and the places of worship. The seeds are kept in the form of *amate* paper, which is cut-out by the shaman in the shape of maize, bananas, beans and other plants, and worshiped. If this is not done, the gods may be offended and leave. Trees are a symbol of potency, with their sap containing the vital force. This force's name, *khi*, is the same word used for blood, and the bark is believed to carry the energy transmitted by the earth element. Thus the bark paper becomes the upholder of this force; it is the symbol of richness.

This perception of the significance of landscape and resources can contribute to the conservation of the remaining forest patches, which are now under pressure due to major land use changes in the region. Specific tree species have now been over-harvested for paper handicraft production; and the people's knowledge is vanishing. Neither Otomi youth nor development and government groups are aware of this loss as they try to improve the manufacture of *amate* paper and manage trees for bark production; nor do the tourists recognize their impacts as they buy *amate* souvenirs.

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prestige is, instead, associated with their gendered knowledge of domestic healing, mixed gardening, and firewood gathering (Nygren 1999, 2000). In her study of the community of Lepaterique in Honduras, Nygren (2003) found that local people's traditional knowledge on forests was strategically linked to their occupational specialty. Although the majority of the local inhabitants depended heavily on forests for their livelihoods, and had rich knowledge of forest resources, their knowledge of forest products varied depending on whether the person was a resin tapper, a charcoal producer, a logger, a slash-and-burn cultivator, a craftsman or a healer (see Box 11.2).

Significant differences in people's level of local knowledge are also based on age. In many forested areas, the old bemoan the fact that young people, in school for much of their time, never learn the knowledge and skills of their parents. Older Kenyah complain that the young no longer understand the “theory” of paddling a canoe under a variety of water conditions. Reed Wadley reports that young Iban adults, having grown up in boarding school and college, come home to farm, and make mistakes that their elders never would have, like planting swamp swiddens in a too frequent succession. In Africa, where CIFOR researchers have found generational antagonism to be comparatively pronounced, these differences may be even more striking. Russell and Tchamou (2001) describe the different understandings of the relationship between soil and social conditions in Cameroon, reflecting very different worldviews that diverge still further as the young are increasingly exposed to non-traditional influences.

Another important consideration is simply the different interests of individuals within a community. Inevitably, there are certain people who know more, whether from natural inclination or the opportunity to learn, about forest plants and animals and their habitats. This variation in local knowledge should not be viewed negatively as an indicator of ignorance or cultural breakdown, but rather as the normal state of knowledge in a dynamic culture where knowledge is constantly being acquired, transformed and transmitted (Ellen et al. 2000). Diversity of knowledge among a group of people is generally considered adaptive. Understanding processes of learning and transmission, especially where knowledge loss is evident or suspected, or where different forms of knowledge interact with each other in a complex way, has become a significant field of study among anthropologists and ethnobiologists (Nygren 1999; Stepp et al. 2002; Novellino 2003).

11.4 Epistemological Differences

The third issue, pertaining to different ways of knowing, is more philosophical, but is nonetheless a powerful factor in efforts to bring together traditional knowledge and what some call cosmopolitan knowledge. Some have argued that men and women have different ways of knowing (Gilligan 1993), but there is even stronger evidence that people who grow up in different cultural settings “know” things differently.

Traditional knowledge is often based on practice, on livelihoods related to the land, on long-honed skills of environmental use (Ingold 2000), as well as on peoples' distinctive histories and cosmologies (Colchester 1982b). Our assumptions vary and affect the way we look at the world (see Box 11.3). If we compare the situations of a western scientist and a third world forest dweller, it is not surprising that we see things from very different perspectives.

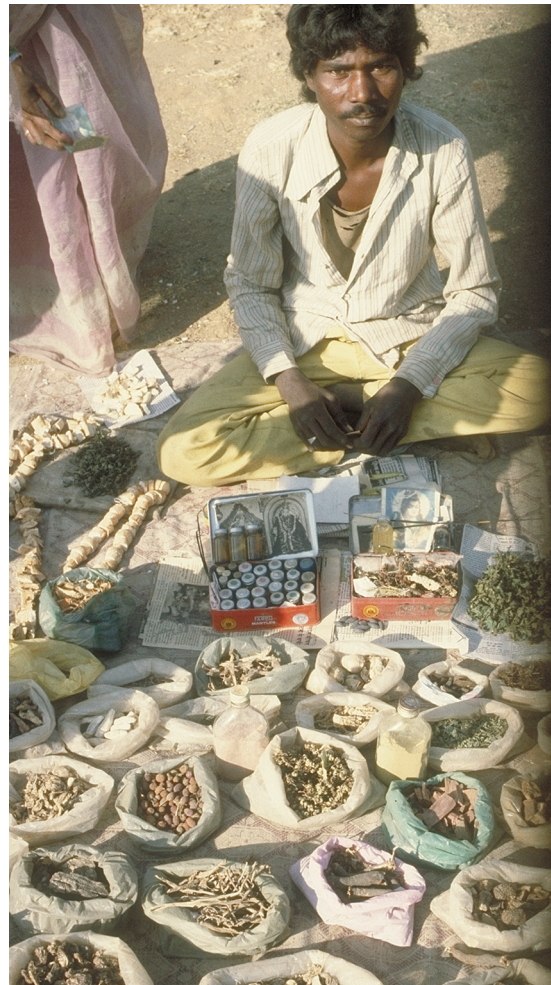
Some of the most important differences that can characterize different knowledge systems include: the role of supernatural explanation, the nature of acceptable evidence, the assumptions inherent in the dominant world view, preference for single or multiple causation and interpretation, the significance of authority and acceptance of "authoritative knowledge," standards for proof of validity, and avenues for acquiring knowledge. However, it is important to remember that there is as much difference among traditional systems as there is between "our" systems and traditional systems in general.

Many have argued that the worldview of reductionist science is inadequate for understanding a changing and complex world. It is time to take seriously some of the other ways of seeing and understanding the world, and look for means to integrate these diverse ways of knowing – both traditional and modern – in a more mutually beneficial way.

11.5 Multiple Use Forestry and Traditional Knowledge Systems

Traditional systems have typically looked at entire forest habitats, while the focus of much, though not all, of formal forestry has been a single crop (see Scott 1998; Sivaramakrishnan 2000). Though the field of forestry has "discovered" multiple use forestry in recent years, traditional knowledge systems have known about it for a long time, and could thus significantly contribute to it. Joshi's work has focused on local knowledge of natural science (Joshi et al. 2004a). Local people's knowledge of the properties of various elements in forests and fields (descriptive) and their knowledge of the natural interaction (explanatory or "cause-effect") between these elements can both be articulated. A natural science perspective on traditional knowledge among farming communities in diverse agro-ecological domains has revealed the traditional farmers' rich and sophisticated understanding of the ecological elements and processes in their agro-ecosystems (Sinclair and Walker 1999; Sinclair and Joshi 2000).

The literature on traditional knowledge has not always recognized the distinction between local people's knowledge and practice or action. This is most notable with respect to the body of work on Indigenous Technical Knowledge (ITK) that often



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Medical plants on sale at a local market in Shahdol District, Madhya Pradesh, India.

describes people's actions rather than the underlying rationale driving them. Although his/her understanding of the ecosystem influences what a local farmer does in the field, farmers' decisions are also often affected by additional factors (cultural norms, religious obligations, and economic and policy circumstances). Although simple observations can reveal people's practices superficially, it takes more effort to understand the underlying knowledge or rationale behind these practices.

The development and wider use of traditional knowledge raises another important aspect – its dynamic nature. As mentioned above, no knowledge system, including traditional knowledge, is static and unchanging. Local communities augment their knowledge by interacting with other people and the media. Joshi et al. (2004a) argue that the ubiquitous use of words such as "traditional" or "indigenous" to describe rural people's knowledge ignores, and perhaps even undermines, its evolving nature. Indeed, many of the crops now cultivated by small-holder farmers are exotic and have been introduced, together with some knowledge regarding their cultivation, from other parts of the world. For example, in



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A woman preparing forest fibres for weaving in Jambi, Sumatra.

the jungle rubber system in Indonesia, smallholders now cultivate a South American tree introduced by colonial governments about a century ago. Local smallholders use technology that is, in part, derived from colonial plantation management (e.g. tapping techniques), but also from smallholder innovation (e.g. high-density planting and allowing secondary forest to regenerate around the rubber trees instead of clean weeding) (Dove 2003).

Recent studies of local ecological knowledge indicate that local people's knowledge is neither heuristic (based on rules of thumb that may have no explanatory basis) nor "culture-bound" but often involves mechanistic explanation of natural processes comparable with, and often complementing, scientific knowledge (Richards 1994; Sinclair and Walker 1999). Recent work on local ecological knowledge about natural resources has often been driven by development imperatives. Examples include hill farmers' management of fodder trees and tree fodder in eastern Nepal (Joshi 1997); farmers' management of their soils in Ghana (Waliszewski and Sinclair 2003), in the middle hills of Nepal (Shrestha 2000), in coffee-based systems in West Lampung, Indonesia and in the Luong Son district in Hoa Binh province, northern Vietnam (Joshi et al. 2004b); as well as smallholder rubber farmers' practice of traditional jungle rubber in Jambi, Indonesia (Joshi et al. 2003). In these efforts, researchers first explore

local people's ecological knowledge and enhance the local knowledge by adapting external knowledge (including what is generated through conventional scientific research). The overall aim is to improve the local peoples' ecological knowledge, enabling them to make better decisions in their natural resource management.

11.6 Traditional Knowledge, Land Rights and International Policy-Making

The final topic we address here is the role of traditional knowledge as a significant element in international policy-making related to development, environment, and trade. Forest peoples themselves have been directly engaged in these debates. The international trade agreements' requirements for countries to develop intellectual property rights regimes have led to proposals from the UN's World Intellectual Property Organisation for protection regimes based on the principles of copyrights, patenting and benefit-sharing. While agreeing on the need for regulation to prevent "bio-piracy" – whereby discoveries based on traditional knowledge are claimed as novel inventions and patented for commercial ends – many local

communities have opposed the proposed measures as a process that will commoditize their knowledge and heritage. They seek instead recognition of their traditional or collective rights to land, self-governance, control of the resources on their lands, and recognition of the knowledge based on living from these resources, according to their customary laws and institutions (Colchester 1996a, b; Posey and Dutfield 1996; Simpson 1997; Dutfield 2000; Laird 2002; Bellmann et al. 2003).

Indeed, one of the main risks that many local communities see in international policy-making about traditional knowledge is that it is treated as a discrete “resource” that can be documented and used, in much the same way as some anthropologists have tended to treat “culture” as something abstracted from everyday life and from the agency of social interaction (Samson 2003). As a result, we can lose sight of the real links between traditional knowledge, practice, livelihoods, and rights in land. For example, debates about “Traditional Forest-Related Knowledge” at the UN Forum on Forests, and the preceding discussions under the Commission for Sustainable Development (the Intergovernmental Panel on Forests and the Intergovernmental Forum on Forests), have tended to treat knowledge as a set of information that can be used by foresters to improve forest management, whereas what forest-dwellers have been seeking is recognition of their rights to land in order to pursue their forest-based ways of life (Leticia Declaration 1996; Griffiths 2001).

It may be that the UNCBD provides a more congenial forum to secure recognition of these connections between knowledge, livelihood, and land. Admittedly, when assessing the implications of Article 8j of the Convention, which requires States to “respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyle,” government discussants have focused on intellectual property rights protections and benefit-sharing procedures and have so far resisted admitting the need to connect such protections to land rights. However, UNCBD Article 10c, which requires State parties to “protect and encourage customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation and sustainable use requirements,” has been interpreted by the UNCBD secretariat as implying that governments should recognize indigenous peoples’ customary laws, corresponding systems of governance and administration, land and water rights, and control over sacred and cultural sites (CBD 1997). Forest peoples have argued that compliance with the UNCBD requires States to adopt and apply national laws that secure indigenous peoples’ customary ownership and control of their territories, so that they can continue to manage their forests by their own institutions, knowledge, and skills (Colchester et al. 2004).

11.7 Conclusions

In this chapter, we have outlined the five main ways in which we consider traditional knowledge to relate to forestry. The complexities of intellectual property rights have been described, including both the inequities in the current system and the dangers of viewing traditional knowledge as a “plug-in” commodity. We have stressed the important differences within communities along such dimensions as gender, ethnicity, caste, class, and age, and the implications of these differences for traditional knowledge. We have also outlined the kinds of epistemological differences of which outsiders are often completely unaware – differences that often account for outsider views that forest peoples are irrational. Different assumptions, different standards of evidence and different worldviews can lead to completely different, but still logical, conclusions. We have indicated some of the complementarities between multiple use forestry and traditional knowledge systems, including classification and more structural, cause-and-effect aspects of knowledge systems. In this realm, we have reminded readers of the dynamism of “traditional” systems; just as our knowledge changes over time, so does that of forest peoples. Finally, we have stressed the links among traditional knowledge, indigenous land rights, and international policy in global efforts to make forest management and use more equitable and just.

In sum, we argue that traditional knowledge, interpreted broadly, represents a vastly under-recognized and under-utilized global good. If addressed respectfully, its increased recognition by the forestry community (and others) has the potential to improve conservation and development efforts, to protect and strengthen traditional ways of life (including livelihoods and rights to land), and to increase the prestige and feelings of self-worth among forest peoples. Such feelings can in turn stimulate greater creativity and further knowledge generation among them. We urge readers to engage with forest peoples; they are often the *legitimate* managers of the forests we find ourselves mandated by law or regulation to manage. The marriage of traditional and scientific knowledge is potentially the most potent combination for both environmental and human well-being.

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