Indigenous Peoples and Conservation Organizations

Experiences in Collaboration

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February 2000

Support for this publication was provided by the Biodiversity Support Program, the Ford Foundation, and World Wildlife Fund.

The Biodiversity Support Program (BSP) is a consortium of World Wildlife Fund, The Nature Conservancy, and World Resources Institute, funded by the United States Agency for International Development (USAID). This publication was made possible through support provided to BSP by the Global Bureau of USAID, under the terms of Cooperative Agreement Number DHR-5554-A-00-8044-00. The opinions expressed herein are those of the authors and do not necessarily reflect the views of USAID.

Typography and layout by Williams Production Group

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Acknowledgments

The editors would like to thank the case study authors, whose work forms the core of this book, for their dedication to carefully documenting project experiences so that others can learn from them. Thanks also go to participants in WWF's 1998 workshop on collaboration with indigenous peoples for sharing their firsthand knowledge to help identify approaches to effective collaboration. This book would not have come to fruition without the long-term commitment, advice, and contributions of Janis Alcorn, Bronwen Golder, Gonzalo Oviedo, Femy Pinto, Kirsten Silvius, Stephanie Thullen, Margaret Williams, Diane Wood, and Sejal Worah. Special appreciation goes to Barbara Wyckoff-Baird, who coordinated the development of the case studies and played a lead role in designing the 1998 workshop. Last, but not least, we thank the initiative's funders—the Ford Foundation; Peoples, Forests and Reefs, a USAID-funded program of the Biodiversity Support Program; and World Wildlife Fund—for seeing the importance of sharing lessons and guidelines for improving collaborative efforts between conservation organizations and indigenous peoples.

Preface

Each day, more and more of the world's species are losing their toeholds on the future. As cities and agricultural lands spread, wildlife habitats are increasingly enveloped and erased by the expanding rings of modern human activity. At the margins of these circles of change, in the last remaining remnants of tropical forests, grasslands, and pristine coasts, live isolated peoples with traditional ties to their lands and waters. Indigenous people inhabit over 85 percent of the world's protected areas. New proposed protected areas almost invariably include areas claimed as indigenous territories. In some countries, more biodiversity is found in indigenous reserves than in nature preserves. And so it is that, at the end of the twentieth century, conservationists are urgently seeking ways to collaborate with indigenous peoples to preserve biodiversity and expand wildlife habitats for the future.

Conservationists have found that such collaboration is not always easy—either locally at the level of communities or regionally at the level of federations. Collaboration remains a work in progress. Indigenous groups are suspicious that conservationists intend to alienate their lands from them. While traditional resource management and value systems generally support conservation objectives, indigenous communities often lack people with expertise for monitoring biodiversity levels and planning land use that is compatible with habitat maintenance. They sometimes lack the organizational capacity to interact with outsiders or to manage project funds. They face multiple problems that accompany modernization. They usually have very little political weight at the national level and are sometimes viewed as troublemakers by national governments. At the international level, however, indigenous peoples are increasingly asserting their right to be recognized as conservation partners, and conservation NGOs increasingly find indigenous interests represented in stakeholder groups.

There is a critical need to strengthen the ability and rights of indigenous peoples to manage biodiversity and find productive avenues for working with conservation NGOs. Donors increasingly recognize this and are responding by providing technical assistance to indigenous resource managers, strengthening the capacity of indigenous groups to communicate effectively with outside NGOs and government agencies, and supporting appropriate policy reforms. Yet insufficient attention has been paid to sharing the lessons NGOs have learned from *their* efforts to collaborate with indigenous peoples.

World Wildlife Fund's (WWF) project experiences can provide lessons for all conservation groups, and foster a broader understanding of the implications of applying WWF's 1996 statement of principles for working with indigenous peoples. While the case studies in this volume review efforts designed with more limited objectives than the new ecoregional initiatives WWF is moving toward, the lessons about collaboration with indigenous communities remain valid. And while the meaning of *indigenous* differs in Asia, Africa, and Latin America, and the degree of self-identification as indigenous peoples varies within regions, the general lessons and insights from WWF field experiences can be applied globally in all types of conservation initiatives involving marginalized ethnic minorities.

I hope that the lessons from this first-ever review of WWF's engagement with indigenous communities will be widely read, and integrated into the operational guidelines of conservation organizations and agencies around the world.

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Part One: Introduction

CHAPTER 1

Conservation and Indigenous Peoples

In *The Diversity of Life*, biologist Edward O. Wilson notes that five cataclysmic "spasms of extinction" from meteorite collisions, climatic changes, and other natural events have swept like scythes through the biosphere during the past 600 million years. He postulates that a sixth great cycle of extinction is now under way, this one caused entirely by humans. Perhaps one-fifth of the world's biodiversity will vanish by the year 2020 if current trends persist.

Less well known is another cycle of extinctions that parallels the one presently sweeping through the biosphere. Traditional societies, with their rich cultural heritage and historical link to nature, are vanishing at a rate unmatched in recorded history, and as many as half of those that remain are expected to disappear in the first 100 years of the new millennium.

It only takes a glance at a map to show why conservationists should be concerned—biodiversity and cultural diversity are highly correlated. If one uses language as an indicator of cultural diversity, then six of the nine countries that account for 60 percent of all human languages are also areas of biological "megadiversity" teeming with plant and animal species so numerous a multitude remains uncounted. In terms of biomass, tropical rain forests are known to be the richest and most varied habitats on the planet. They are also the most culturally diverse regions, home to as many as half the world's more than 4,000 indigenous peoples.

This is significant because, until recently, most of these peoples lived in relative harmony with their environments, using and managing their resource bases sustainably. The environmental alterations made by indigenous groups, such as the Bentian Dayak rattan farmers of Kalimantaan, were so subtle, in fact, that outsiders have mistakenly presumed vast stretches of the Earth to be wildernesses barren of human populations. The movement to establish national parks and reserves that began at the turn of the twentieth century was intended to keep at least a representative portion of these areas pristine, removed from human predation as the pace of technology and economic development accelerated. By the last quarter of the century it became clear in much of the world that this idea had serious flaws. Conservationists who persuaded the state to establish protected areas found many of these victories to be hollow. Government agencies often lacked either the political will or the manpower, skills, and funding to defend park boundaries from outside encroachment.

By the 1980s, some conservation organizations began to develop new strategies designed to turn local communities into allies of park conservation. Some approaches focused on creating rings of low-intensity development around parks that would act as barriers to colonization by migrant farmers who practiced slash-and-burn agriculture. Others focused on projects that more actively involved local populations in managing wildlife and other resources in ways that gave them a tangible stake in preserving habitat not only around but in protected areas. Sustainable development that merged income generation and conservation became a new watchword.

WWF published a book about its experiences during a decade of work with rural communities in integrated conservation and development projects (Larson et al. 1996). Valuable lessons were learned that are being applied in working with communities around the world. Yet this field experience also suggested that the rural poor are far from monolithic, varying not only from country to country, but within national borders. In fact, many of the projects involved populations that were marginalized from the mainstream by language and culture as well as class and income. And it became increasingly evident that these groups were not intruders to wilderness ecosystems but integral parts of them. Indeed, in many places national reserves and parks had been carved out of their traditional territories. Conservationists were in danger of adding to the misery of the world's most disenfranchised peoples. WWF responded by drafting a policy statement respecting the integrity and rights of traditional peoples and establishing guidelines for its relations with them (see Annex).

It became apparent that working with indigenous communities involves complex issues that pose new challenges but also open up new opportunities. Indigenous peoples are in many ways more organized and better able to represent their own interests and make their case to outsiders than ever before. Indigenous groups around the world have established more than a thousand grass-roots organizations to enhance their livelihoods and gain greater control of their land and resources (Hitchcock 1994). Many indigenous groups are politically active and play an important role in influencing national and international environmental and sustainable development policies.

At the same time, these communities stand at a crossroads and confront an uncertain future. If many indigenous groups once lived in relative balance with their environments, that equation has been severely disrupted. Indigenous peoples face mounting pressures from the outside as encroachment by agribusiness, by petroleum, mineral, and timber combines, and by uprooted, landless farmers shrinks traditional territories. They also face a growing internal challenge as their population densities increase and the market economy undermines subsistence strategies and the cultural traditions that supported them. Indigenous peoples are not only in danger of losing their land but the identity the land gave them. They are increasingly under pressure to augment rates of resource extraction to unsustainable levels. If they resist doing so, someone else is ready to argue for the right to do so—and the state, starved for funds, is often more than ready to listen.

Indigenous groups that have maintained close contact with the land know it well. Where cultures and traditional resource management practices remain relatively intact, they often have mechanisms for dealing with resource scarcity or other changes in the natural resource base, but have limited means for assessing the side effects of new technologies or new kinds of exploitation. A potential role for conservation organizations is to help indigenous groups obtain relevant legal, scientific, and economic information, weigh their options, and select strategies that are appropriate. This is more complicated than it seems, since many traditional peoples face the dual challenge of organizing themselves institutionally, first to claim legal title to their land and second to manage the land wisely.

In looking at the issue of conservation and indigenous peoples, two key questions emerge: What are the common concerns of conservation organizations and indigenous peoples? How can they collaborate effectively?

To better understand the issues involved, WWF's Latin America and Caribbean Program (LAC) decided in 1996 to survey its experience working with indigenous peoples. From a decade of funding, 35 projects were identified that had at least one component related to indigenous peo-

ple. These projects ranged from efforts in Mexico and Central America that involved the Maya, Miskito, and Kuna Indians, to efforts in South America with a wide variety of indigenous groups in Brazil, Peru, Colombia, Ecuador, Chile, Argentina, and Bolivia.

The spectrum of project activities has been as broad as the geographic distribution was wide. Support has been provided for training, educational, and capacity-building efforts. Some projects focused entirely on a specific issue of interest to an indigenous group, such as the Xavante's concern about declining wildlife populations on their homeland in central Brazil. Other efforts, such as the Pacaya–Samiria project in Peru, included indigenous people as stakeholders in larger integrated conservation and development projects. Over time, WWF gathered experience at working with indigenous organizations that ranged in size from village associations to regional federations, and national and even transnational confederations. All of these projects contributed to WWF's growing understanding of the need for meaningful partnerships with indigenous peoples on conservation and natural resource management at the community, national, and international levels.

In collaboration with WWF's People and Conservation Program, LAC decided to select several case studies for in-depth review and augment them with case studies from other areas of the globe to identify common processes and lessons that could help guide future project activity. Respected experts in conservation and development who were closely involved with the communities and projects being profiled were asked to prepare the case studies. They were asked to examine how conservation organizations collaborated with indigenous groups to develop a common agenda and strengthen local capacity to implement it, and how this process affected project results. A workshop brought together field staff from four regional programs within WWF to discuss the studies and bring their own experiences to bear in analyzing issues that had been spotlighted. An overview of the history and situation of indigenous peoples worldwide, presented at the workshop, is included here to provide a contextual lens that readers can use to bring individual cases into sharper focus.

The structure of this book mirrors the process of its formation. The overview concludes Part One. Part Two contains the five case studies that form the book's core. Part Three discusses common themes and closes with a look ahead at how lessons might be applied.

Although the sample of case studies is small, taken together they suggest how human cultures have mirrored the richness and diversity of the natural environments that helped shape them. Although they are from different parts of the world and involve peoples who would have great difficulty speaking to one another directly, the experiences in one locale often throw light on efforts in the other case studies to locally manage resources vital to community survival. Chapter 3 examines an attempt to selectively harvest, plane, and market wood products for export by Quichua-speaking communities in an oil-rich area of the Ecuadorian Amazon. Chapter 4 presents an effort in Brazil by outsiders and a Western-educated Xavante leader to process and market native fruits, and contrasts it with a project to manage subsistence game harvests which has helped spark a cultural revival and engage the broader community. Chapter 5 looks at the Sirionó Indians of eastern Bolivia, who have battled back from the verge of extinction to win a territory, and now must develop a resource management plan to hold on to it. Chapter 6 examines how subsistence fisheries management is taking hold among the Foi people of Lake Kutubu in Papua New Guinea (PNG), one of the crown jewels of world biodiversity. Chapter 7 explores how the Ju/'hoan Bushmen in northeastern Namibia are working with government planners to adapt traditional resource management systems, invent new institutional structures, and develop ecotourism in the Kalahari Desert.

Readers should keep in mind two sets of issues. The first set is internal to indigenous groups and involves questions about cultural intactness, institutional capacity, and the mix of subsistence and cash economies. Issues about land tenure and usage rights are central here. The second set of issues is external and concerns the kind and degree of involvement by outside actors. Two of the case studies, for example, involve nearby national parks, but government policies in the two cases are polar opposites, shedding light on

the difference it makes when the state encourages rather than discourages community involvement in managing natural resources. Another example is petroleum development. In the case of Napo, Ecuador, local communities are scrambling to cope with the side effects of unbridled development by multinational firms in partnership with the state. In PNG, a petroleum consortium is trying to minimize its intrusiveness and share the benefits of newfound wealth with local communities. One might also note the role that tenure plays in the two cases, since indigenous peoples in PNG enjoy customary ownership and usage rights unparalleled in most areas of the world.

A final example is the role conservation organizations, particularly WWF, played in these case studies. In some, WWF was a peripheral collaborator in a cobbled-together coalition. In others its goal was to be an active partner. Sometimes, this difference reflected a disparity in resources between partners whose primary focus was socioeconomic development and those whose long-term focus was conservation. Other times, it reflected where a project fell on WWF's learning curve. The Brazil and Ecuador projects, for instance, date from WWF's first experiences with community-based conservation and development, while the examples from PNG and Namibia began later and benefited from what was learned before.

Lessons from the case studies are also relevant to new conservation contexts. During the past two years, WWF and other conservation organizations have widened their focus to target conservation resources on ecoregions—large geographic areas that contain tightly integrated sets of ecosystems and important ecological interactions and evolutionary mechanisms that generate and maintain species. The new strategy grows out of heightened concern that successfully protecting isolated patches of wilderness and specific species is not enough to ward off accelerating threats to the planet's biodiversity. A new scale of thinking, planning, and acting is needed to meet the scale of the biological challenge. Collaboration of diverse stakeholders is a primary strategy for achieving these ambitious goals (Dinerstein et al. 1999). Examples of emerging partnerships with indigenous peoples and other issues involved in working at this larger scale are provided in the conclusion.

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CHAPTER 2

Conservation Partnerships with Indigenous Peoples

To form effective partnerships, one must know one's partners well. In the case of indigenous peoples, this poses special problems. The populations are so diverse and their marginalization so deep in many cases that outsiders frequently lack a clear picture of whom exactly they are working with. This chapter reviews the terminology in order to explain why these groups are important to conservation of global biodiversity. It then reviews the broader policy and programmatic context in which indigenous peoples and conservation organizations are interacting. It closes by examining how WWF approaches its work with indigenous peoples, and profiles issues that other conservation groups are likely to face as they take on similar activities.

I. A Global Overview

1.1 Defining What Indigenous Means

Given their diverse histories, cultures, and locales, it is not surprising that no single term completely encompasses the people who are the focus of this book. Officially, WWF uses the definition (or "statement of coverage") of the International Labour Organization (ILO) in Convention 169—Concerning Indigenous and Tribal Peoples in Independent Countries.[1] According to ILO (1998):

The term *indigenous* refers to those who, while retaining totally or partially their traditional languages, institutions, and lifestyles which distinguish them from the dominant society, occupied a particular area before other population groups arrived. This is a description which is valid in North and South America, and in some areas of the Pacific. In most of the world, however, there is very little distinction between the time at which tribal and other traditional peoples arrived in the region and the time at which other populations arrived. In Africa, for instance, there is no evidence to indicate that the Maasai, the Pygmies or the San (Bushmen), namely peoples who have distinct social, economic and cultural features, arrived in the region they now inhabit long before other African populations. The same is true in some parts of Asia. The ILO therefore decided, when it first began working intensively on these questions shortly after World War II, that it should refer to indigenous and tribal peoples. The intention was to cover a social situation, rather than to establish a priority based on whose ancestors had arrived in a particular area first. In addition, the description of certain

population groups as tribal is more easily accepted by some governments than a description of those peoples as indigenous.

Another term that has become relevant for biodiversity conservation since the Convention on Biological Diversity came into force is that of "local communities embodying traditional lifestyles," or "traditional peoples" for short. This term has a socioeconomic as well as a cultural dimension. It usually implies a largely subsistence economy based on close ties to the land.

International organizations that are working with indigenous peoples, such as the UN Working Group on Indigenous Populations, the World Bank, and the European Union, have identified the following characteristics of indigenous peoples relative to natural resource management:

- ancestral attachment to lands and resources;
- management of relatively large territories or areas;
- collective rights over resources;
- traditional systems of control, use, and management of lands and resources;
- traditional institutions and leadership structures for self-governance and decision making;
- systems for benefit sharing;
- traditional ecological knowledge; and
- subsistence economies that are largely self-sufficient and rely on resource diversity rather than monocultures or simplified ecosystems.

The question for conservation organizations is whether these characteristics apply as well to traditional rural peoples, mainly in Asia, Africa, and Latin America, who generally are not called or don't call themselves "indigenous." In Latin America, for example, this question can be asked about Afro–Latin American groups like the Maroons of Suriname, the black communities of the Chocó forests, and the Garífunas of Central America. If, generally speaking, these groups share most of the characteristics listed above, an essential difference between traditional and indigenous peoples has been the latter's claimed right to political self-determination, based on a distinct identity and culture and often on prior occupation. This distinction, however, is also blurring since traditional peoples often have distinctive cultures that marginalize them from mainstream society, and many ethnolinguistic communities around the world are claiming the right to political self-determination.

In many cases, the primary difference between indigenous and traditional peoples may be one of aboriginality to the place in question, particularly in cases where colonialism has uprooted and dispossessed indigenous peoples. Aboriginality, in many legal systems, can be used to support claims to limited sovereignty, a right that the occupying power sometimes has implicitly acknowledged through the signing of treaties. Until recently, these rights have remained latent, and aboriginal peoples have faced a Hobson's choice between cultural assimilation and remaining wards of the state. When indigenous peoples are able to establish these rights legally, they have an important power that traditional peoples often lack: the power to say "no" to outsiders, whether they are conservationists or developers.

For WWF's conservation work, the differences between indigenous and traditional peoples are far less important than the similarities. Therefore WWF policies that refer to indigenous peoples refer also to tribal peoples, and by extension to traditional peoples.

1.2 Population Estimates and Distribution

Using ILO Convention 169's definition, there are some 300 million men, women, and children worldwide who can be called "indigenous and tribal" people living within the borders of independent nation states in North and South America, Northern Europe, Asia, Africa, and Oceania. The land they occupy spans a wide geographical range, including the polar regions, northern and southern deserts, and tropical savannas and forests. Indigenous peoples account for 4,000 to 5,000 of the nearly 7,000 spoken languages, representing much of humankind's cultural diversity. They include groups as disparate as the Quechua from Bolivia, Ecuador, and Peru, who collectively number more than 10 million people, and the tiny band of Gurumalum in Papua New Guinea who number fewer than 10 individuals (IUCN 1997, 30).

Although these groups account for only about 6 percent of the world's population (Hitchcock 1994), they live in areas of vital importance to

conservationists. Alan Durning (1992) notes that "the vast majority of the world's biological diversity ... is in landscapes and seascapes inhabited and used by local peoples, mostly indigenous." This is reflected in the correlation between linguistic diversity and biodiversity. Of the nine countries that account for 60 percent of all human languages, six are also centers of biodiversity that contain immense numbers of plant and animal species (see figure 2.1). Ten of the 12 megacenters for biodiversity listed in figure 2.1 can be found among the 25 countries containing the largest numbers of endemic languages (see lists 2.1 and 2.2). Bio-rich tropical rain forests are also culturally diverse, containing about 2,000 indigenous peoples, nearly half the world's total.

Indigenous peoples are linked with the land they occupy through highly sophisticated resource management practices. Most "wildernesses," especially those that currently are sparsely populated, are not pristine (Gomez-Pompa and Kaus 1992). Many seemingly untouched landscapes are actually cultural landscapes, either created or modified by humans through natural forest management, cultivation, or the use of fire. According to a Canadian indigenous peoples' organization, the Four Directions Council (1996), "the territories in which indigenous peoples traditionally live are shaped environments, with biodiversity as a priority goal, notwithstanding the fact that the modifications may be subtle and can be confused with the natural evolution of the landscape."

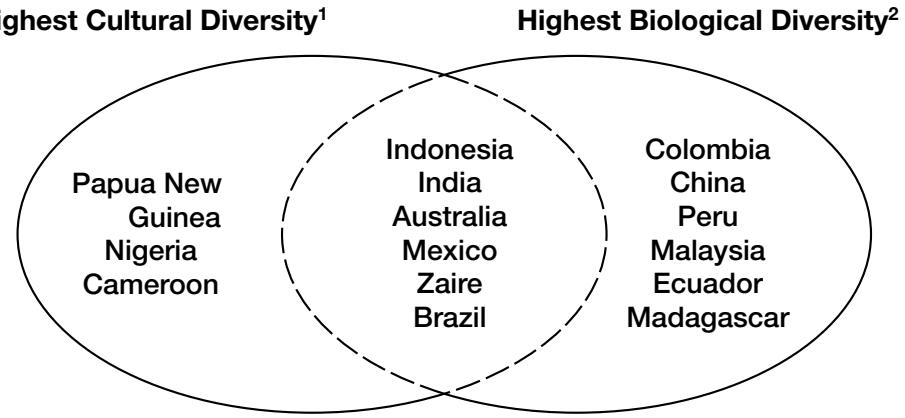
WWF International's People and Conservation Unit has conducted an analysis that supports these views. It superimposed maps of WWF's 200 priority ecoregions around the world onto maps showing the distribution of indigenous cultures. The results show a significant overlap of cultural and biological diversity (see table 2.1). Although the analysis is not yet complete, preliminary results confirm the importance of indigenous peoples and their issues for scaling up conservation efforts.

1.3 Threats, Vulnerability, and Marginalization

Tragically, and despite their contributions to biodiversity conservation and to human culture, indigenous societies are disappearing at an unprecedented pace. Approximately 10 percent of existing indigenous languages are nearly extinct, endangering the cultures of hundreds of peoples. Among countries facing the highest rates of language extinction are Australia with 138 and the United States with 67. During the next century, at least half the existing indigenous languages are projected to disappear, erasing the ecological knowledge accumulated by countless generations.

Indigenous cultures face threats from many directions. Often they are direct targets of hatred and

Figure 2.1 Countries with Cultural and Biological Megadiversity



[1]Countries where more than 200 languages are spoken
[2]Countries listed by biologists as 'megadiversity' countries for their exceptional numbers of unique species

Source: Worldwatch Institute, cited in Durning (1992:16)

hostility from the groups that dominate mainstream national societies. Other times they are victimized by policies and actions that are well intentioned but harmful. The imposition of alien land tenure, religions, and educational systems may be motivated by the desire to "advance," "integrate," or help indigenous peoples "progress" in the modern world, yet these efforts often are self-defeating because they undermine the identity and values systems of the people being "helped." Until recently the conventional wisdom of modernity held that the rural poor, including indigenous populations, were part of the problem of "underdevelopment," sometimes even the main problem, rather than part of the solution. Blinded by cultural arrogance, too many conservation and development projects have gone awry or done more harm than good because they did not tap the resourcefulness of local communities.

The accelerating integration of the global economy now touches indigenous people living in the remotest corners of the planet. Technological change and consumerism introduced by the public and private sectors have undermined traditional value systems as the conversion from a subsistence economy to a cash economy follows in the wake of large-scale efforts to extract mineral, timber, and other natural resources. The result in many places has been a loss of social cohesion, displacement from traditional territories, dependency, impoverishment, and disease.

List 2.1 Top 25 Countries by Number of Endemic Languages

1. Papua New Guinea (847)
2. Indonesia (655)
3. Nigeria (376)
4. India (309)
5. Australia (261)
6. Mexico (230)
7. Cameroon (201)
8. Brazil (185)
9. Zaire (158)
10. Philippines (153)
11. USA (143)
12. Vanuatu (105)
13. Tanzania (101)
14. Sudan (97)
15. Malaysia (92)
16. Ethiopia (90)
17. China (77)
18. Peru (75)
19. Chad (74)
20. Russia (71)
21. Solomon Islands (69)
22. Nepal (68)
23. Colombia (55)
24. Côte d'Ivoire (51)
25. Canada (47)

List 2.2 Megadiversity Countries: Concurrence with Endemic Languages

(Countries in top 25 for endemic languages in **bold**)
Countries listed alphabetically (rank in "Top 25," list 2.1, in parentheses)

Australia (5)
Brazil (8)
China (17)
Colombia (23)
Ecuador—
India (4)
Indonesia (2)
Madagascar—
Malaysia (15)
Mexico (6)
Peru (18)
Zaire (9)

Source: Maffi 1999.

Table 2.1 Ethnolinguistic Groups (EG) in Global 200 Terrestrial Ecoregions (TER)

Biogeographical Realm	Number of terrestrial ecoregions (TERs) in realm	Number and percentage of TERs in realm that contain EGs	Number of ethnolinguisitic groups (EGs) in realm	Number and percentage of the realm s EGs living in the realm s TERs
Afrotropical	32	30 (94%)	1,934	1,364 (71%)
Neotropical	30	28 (93%)	830	535 (64%)
Nearctic	11	11 (100%)	223	80 (36%)
Indomalayan	24	24 (100%)	1,547	1,117 (72%)
Oceanian	3	3 (100%)	153	9 (6%)
Palearctic	21	21 (100%)	748	662 (89%)
Australasian	15	15 (100%)	1,432	1,122 (78%)
WORLD	136	132 (97%) [2]	6,867 [3]	4,889 (71%)

Source: WWF-International, People and Conservation Program, Gland, Switzerland, 1998.

1.4 Indigenous Peoples and International Environmental Policy

WWF's indigenous peoples policy recognizes that "unfortunately, [indigenous] cultures have become highly vulnerable to destructive forces related to unsustainable use of resources, population expansion, and the global economy," and that "industrialized societies bear a heavy responsibility for the creation of these destructive forces." It points to the need to "correct the national and international political, economic, social, and legal imbalances giving rise to these destructive forces, and to address their local effects."

WWF is not alone in this recognition. The 1992 United Nations Conference on Environment and Development in Rio de Janeiro recognized indigenous peoples as important stakeholders in environment and development policies at the international level. Almost every relevant international instrument on the environment signed at or developed after the Rio Summit includes provisions related to indigenous peoples or has initiated processes to promote their participation.

Agenda 21, the international agreement on follow-up actions to the conference, considers indigenous peoples to be a "Major Group" in trailblazing a path toward sustainable development, and proposes a number of objectives and activities that are compatible with WWF's agenda (see box 2.1). The international policy forums that address conservation issues—the Commission on Sustainable Development, the Convention on Biological Diversity, the Convention to Combat Desertification, the Inter-Governmental Forum on Forests, and the Ramsar Convention, among others—include indigenous peoples as essential stakeholders. In policy debates, the interests of indigenous peoples often coincide with those of WWF and other conservation organizations, especially when dealing with environmental threats and the underlying causes of biodiversity loss.

Apart from the arena of international environmental policy, an array of multinational organizations has incorporated policy provisions on indigenous peoples into their program operations.

Particularly prominent are the World Bank, whose Operational Directive on Indigenous Peoples is well known and frequently cited, and the Inter-American Development Bank (IDB) and the Asian Development Bank (ADB), which have similar policies.

Many governments of developed countries have also adopted policies to ensure that their international assistance programs for development and the environment respect indigenous rights. Among others, Denmark, the Netherlands, Spain, and more recently the European Union have all specifically addressed the issue of local community rights and interests in undertaking development and environmental actions with indigenous groups. This convergence in policy is an important strand in the growing partnership between WWF and the aid agencies of these governments on conservation projects worldwide.

Finally, a broad spectrum of international conservation organizations has adopted policies geared toward indigenous peoples. WWF adopted its Statement of Principles on Indigenous Peoples and Conservation (see Annex) in May 1996. In October 1996, the World Conservation Congress of the World Conservation Union (IUCN) passed a set of eight resolutions related to indigenous peoples. IUCN recognized them as repositories of traditional knowledge about biodiversity, and noted the role they play in protected areas, forests, marine and coastal habitats, and a host of other environmental areas. Nongovernmental organizations (NGOs) dealing with forest issues, such as the World Rainforest Movement and the Rainforest Foundation, have made issues affecting indigenous peoples a fundamental component of their strategy. Although some environmental groups like The Nature Conservancy, Friends of the Earth, and Conservation International do not have specific policies or programs dealing with indigenous peoples, they have carried out activities in coordination with indigenous organizations on many occasions and have expressed interest in indigenous issues.

Perhaps the most notable exception to this policy convergence in the international conservation movement is Greenpeace, which, in spite of internal discussions and pressure, has declared indigenous peoples outside its orbit of priorities.

II. WWF's Approach to Working with Indigenous Peoples

WWF seeks to partner with indigenous groups when conservation of their land and resources coincides with its conservation priorities. WWF's partnerships with indigenous peoples are based on recognition of their legitimate rights and interests. These two affirmations are the cornerstones of WWF's indigenous peoples policy, which includes a set of principles to guide the formation of partnerships. This section discusses the principles, and the next section addresses the programmatic guides to partnership.

2.1 Achieving WWF's Conservation Mission

WWF's guiding philosophy is that the Earth's natural systems, resources, and life forms should be conserved for their intrinsic value and for the benefit of future generations. WWF's commitment to collaborating with indigenous peoples to achieve conservation is firm, but not unconditional. As stated in WWF's indigenous peoples policy:

> WWF may choose not to support, and may actively oppose, activities it judges unsustainable from the standpoint of species or ecosystems… even if such activities are carried out by indigenous peoples. WWF seeks out partnerships with local communities, grassroots groups, nongovernmental organizations, and other groups, including indigenous communities and indigenous peoples' organizations, that share WWF's commitment to the conservation of biodiversity, sustainable use of resources, and pollution prevention.

This echoes Article 10(c) of the Convention on Biological Diversity, which requires parties to "protect and encourage customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements." This means that traditional systems for environmental management and for the use of biological resources should be supported by conservation organizations as long as those systems contribute to the conservation and sustainable use of biodiversity. Clearly those systems are more likely to remain sustainable as circumstances change if

Box 1 AGENDA 21 - CHAPTER 26: Recognizing and Strengthening the Role of Indigenous People and Their Communities

Objectives

26.3 In full partnership with indigenous people and their communities, Governments and, where appropriate, intergovernmental organizations should aim at fulfilling the following objectives:

(a) Establishment of a process to empower indigenous people and their communities through measures that include:

(i) Adoption or strengthening of appropriate policies and/or legal instruments at the national level;

(ii) Recognition that the lands of indigenous people and their communities should be protected from activities that are environmentally unsound or that the indigenous people concerned consider to be socially and culturally inappropriate;

(iii) Recognition of their values, traditional knowledge and resource management practices with a view to promoting environmentally sound and sustainable development;

(iv) Recognition that traditional and direct dependence on renewable resources and ecosystems, including sustainable harvesting, continues to be essential to the cultural, economic and physical well-being of indigenous people and their communities;

(v) Development and strengthening of national dispute-resolution arrangements in relation to settlement of land and resource-management concerns;

(vi) Support for alternative environmentally sound means of production to ensure a range of choices on how to improve their quality of life so that they effectively participate in sustainable development;

(vii) Enhancement of capacity-building for indigenous communities, based on the adaptation and exchange of traditional experience, knowledge and resource-management practices, to ensure their sustainable development;

(b) Establishment, where appropriate, of arrangements to strengthen the active participation of indigenous people and their communities in the national formulation of policies, laws and programmes relating to resource management and other development processes that may affect them, and their initiation of proposals for such policies and programmes;

(c) Involvement of indigenous people and their communities at the national and local levels in resource management and conservation strategies and other relevant programmes established to support and review sustainable development strategies, such as those suggested in other programme areas of Agenda 21.

Source: UNCED 1992.

indigenous peoples and local communities participate in determining the criteria for measuring sustainability. If they understand the reasons for changing behaviors, they are more likely to make the changes.

There is no blueprint for working with indigenous peoples. Each situation is different, not only culturally but socially, politically, economically, and geographically. While WWF's involvement is based on a clear set of principles, a solid understanding of the links between biological and cultural diversity, and a genuine appreciation for indigenous peoples' contribution to biodiversity conservation, its operational approach should be sensitive and flexible in order to maximize the input of its partners.

2.2 Why Human Rights and Self-Determination Should Matter to Conservationists

Indigenous organizations repeatedly and forcefully insist that development and the environment must be approached from a human-rights perspective. The conservation movement has often responded that human rights are beyond its mission and mandate. Increasingly the difference between these two viewpoints is narrowing.

Environmental human rights—the right of present and future generations to enjoy a healthy life in a healthy environment—are implicitly at the heart of the environmental agenda, and will become more explicitly so in the future. Environmental human rights are linked to the right to a decent quality of life and to other related rights recognized in the International Covenant on Economic, Social, and Cultural Rights. WWF and other conservation organizations recognize that indigenous groups cannot be expected to commit themselves to conservation if their livelihoods are in peril from lack of secure tenure to land and resources. Indeed, it is the strength of their claim to the land, coupled with long histories of managing it wisely, that make them attractive potential partners for environmental stewardship. They cannot play this role under conditions of political oppression and marginalization. The more people's basic needs are met and their rights respected, the more they will be willing and able to engage in biodiversity conservation because they understand it is in their own interest to do so.

For indigenous peoples, the question of human rights is bound up with the struggle for self-determination, which involves control of traditional resources and cultural autonomy within existing nation states. WWF acknowledges indigenous peoples' right to self-determination, and has built its own policies on it. When indigenous peoples define themselves as distinct nations and seek political autonomy, WWF respects their efforts to negotiate their status with governments, but does not consider this to be an issue on which it must take sides.

III. Key Program Issues for Conservation Organizations

Collaboration with indigenous peoples falls under several programmatic areas. This section explores six of them: 1) participation and prior informed consent; 2) protected areas; 3) traditional ecological knowledge and management practices; 4) alternative economic options and benefit sharing; 5) mitigation of environmental impacts; and 6) conservation capacity-building. Many of these issues are discussed in more detail in the case studies that follow.

3.1 Prior Informed Consent

Prior informed consent (PIC) is a fundamental principle for indigenous collaboration with outside organizations and the basis for protecting all other rights. PIC requires outsiders proposing any action to fully inform indigenous groups of the reasons for the activity, how it will be implemented in detail, the potential risks involved, and how this activity realistically can be expected to affect other aspects of community life in the short and long terms. If the indigenous community withholds its consent, no activities can begin, and activities already under way must be halted. The following types of activities relevant to biodiversity conservation should be subject to PIC:

- the extraction of renewable or nonrenewable resources from indigenous communities or their territories;
- the acquisition of knowledge from a person or people, whether for commercial or noncommercial purposes; and
- all projects affecting indigenous communities, including infrastructure construction of roads and dams, and colonization schemes.

Since legal frameworks and tools to exercise and protect PIC are still in their infancy, WWF addresses this issue primarily at the local level through agreements with communities. This does not foreclose efforts to establish needed legal tools at national and other levels.

3.2 Protected Areas

The establishment of protected areas is a primary tool for conserving biodiversity around the world. Indigenous peoples inhabit nearly 20 percent of the world's surface, or close to three times the total surface covered by protected areas. Of course, many of the world's protected areas overlap with indigenous lands and territories. For example, in Latin America local populations, most of them indigenous, inhabit 86 percent of protected areas (Amend 1992).

The protected area model is presumed to be a creation of modern Western societies, dating back to the establishment of Yellowstone National Park in the United States in 1872. Yet there are similar models that are much older. For hundreds if not thousands of years, traditional societies have established "sacred" areas within the compass of their territorial lands and waters where human activities have been very limited and strictly regulated. This traditional concept of protected areas is alive and functioning in many parts of the world, although it generally lacks recognition and support from modern states and societies. Sadly, despite their respect for nature, indigenous communities have been expelled from their traditional lands to create reserves and parks. The livelihoods and cultures of these communities have been severely disrupted, turning protected areas into an enemy rather than a guarantor of community survival.

WWF has joined with the World Commission on Protected Areas (WCPA) to develop a new framework policy on indigenous/traditional peoples and protected areas. This policy promotes the concept of partnerships between indigenous communities and the public or private institutions responsible for administering a park or reserve when the local groups' lands and resources fall within the boundaries of the protected area. The policy also supports indigenous peoples' own actions to protect their territories. Within this framework, conservation groups are encouraged to support the growing number of comanagement arrangements between the state and indigenous peoples, and to work to extend recognition of indigenous protected areas as self-regulated parts of national protected-area systems.

3.3 Traditional Ecological Knowledge

Traditional knowledge is an important resource for development of strategies to conserve biodiversity. Generations of interaction with specific habitats and species can provide a long-term perspective on ecosystem dynamics. Anthropologists and other researchers have frequently documented how various traditional peoples have developed sophisticated classification systems, in many cases producing more complete taxonomies than those of Western science. Traditional knowledge is also a catalyst for cultural adaptation to environmental conditions. One of the great ironies facing many indigenous peoples is that scientific and commercial interest in their ecological knowledge and resource management practices is increasing while traditional knowledge systems are disappearing at an accelerating rate as globalization makes the world more biologically and culturally uniform.

WWF has worked with indigenous peoples in several countries to protect and revitalize traditional knowledge. In Thailand, WWF supports the Karen people's efforts to maintain and consolidate their cultural practices, and pays particular attention to strengthening knowledge of local ecosystems. The People and Plants Program implements various ethnobotany projects in Asia, Africa, and the Pacific to recuperate, protect, and revitalize traditional botanical knowledge, and to help local people conserve their plant resources.

Traditional management practices also have much to offer to biodiversity conservation. Article 10(c) of the Convention on Biological Diversity requires recovery and support of these practices when they are "compatible with conservation or sustainable use requirements." The assumption underlying this injunction is that these practices not only have specific local values but can be integrated into national efforts to enhance biodiversity conservation in a given country.

Some of WWF's work with indigenous groups supports that assumption. For instance, a study with indigenous communities in the Arctic showed that their use of wildlife was essentially

compatible with conservation objectives, and that external market forces have caused recent disruptions. Based on this analysis, and on working with local people, WWF developed guidelines for the sustainable use of wildlife in the region. Many of the concepts in the guidelines are applicable to other areas where communities are concerned that their wildlife is dwindling.

Fortunately international environmental law increasingly recognizes, through agreements such as the Convention on Biological Diversity, that the knowledge, innovations, and practices of indigenous peoples and local communities are vital resources for preserving the genetic heritage of the planet. Systematic effort is needed to help revitalize and protect such knowledge in collaboration with concerned communities, with full respect for their intellectual property rights. Indigenous peoples should have the opportunity to benefit fairly from the use and application of their knowledge, and this will serve our common interest by strengthening their ability and commitment to act as environmental stewards.

3.4 Benefit Sharing and Economic Alternatives

Long-term conservation of indigenous peoples' territories and resources requires that communities directly and equitably benefit from the use of their land. In most cases, conservation implies trade-offs that have direct or indirect impact on local livelihoods. Indigenous and traditional people should not be expected to participate in conservation activities that do not contribute to improving their quality of life. Ensuring an improved quality of life often involves the creation of economic alternatives that promote sustainable resource use and generate income to counterbalance market pressures to overexploit resources for short-term gain. Care must also be taken that benefits are broadly distributed to avoid fragmenting the community and undermining its ability to manage its resource base wisely.

3.5 Mitigation of Environmental Impacts

Indigenous groups and conservation organizations are both concerned about the destructive impact that ill-conceived logging, mining, oil exploitation, and other development efforts can have on the environment. These issues have converted many indigenous groups into activists fighting to defend the integrity of their lands and ecosystems. Through coordinated and mutually supportive work, conservationists and indigenous peoples can mitigate these threats and promote practices that lead to sustainable development.

Article 7 of ILO Convention 169 requires governments to carry out environmental impact assessments (EIAs) for any activities taking place on the lands and territories of indigenous peoples that could affect the quality of their environment and resource bases. To help ensure that this proscription is followed, WWF has pledged to help monitor development of EIAs for external interventions in any indigenous territory where WWF works so that affected communities are fully informed, allowed to voice their concerns, and able to defend their rights. WWF, in cooperation with concerned indigenous organizations, will also urge governments to put in place all necessary measures to prevent and control environmental impacts in those lands and territories, and will help local organizations strengthen their own capacity for prevention, control, monitoring, and mitigation.

3.6 Building Conservation Capacity

Building the conservation capacity of community organizations is not limited to the circumstances described in the preceding section. It is a fundamental tool for enabling indigenous and other communities to plan and implement conservation activities, and it is a bedrock of WWF's conservation strategy. Capacity building covers a wide range of activities—from training to improve the leadership, accounting, and administrative skills of indigenous organizations, to providing technical assistance, access to information, and support for networking. Assistance should take place in the context of respect for self-governing institutions and customary law, and should promote a social environment that is conducive to real democracy—one in which marginalized peoples have a say in all matters that affect their well-being. Indigenous conservation capacity will be enhanced through the promotion of macro-policies like the decentralization of natural resource management, and capacity building at the local and regional levels will make states more likely to devolve responsibility.

One aspect of capacity building deserves special attention. Environmental problems affecting indigenous peoples' lands and resources are often

linked to conflicts of interest among a variety of stakeholders, including governments, businesses, and other local groups. In these situations, indigenous peoples frequently lack the power to be included in the decision-making process from the beginning, and lack access to the information, expertise, and funding needed to define, articulate, and defend their interests through public advocacy campaigns. Conservation groups can play a role in providing support to indigenous peoples to help even the playing field. In doing so, it is important to partner with other organizations experienced in environmental brokerage to ensure that the best possible expertise is brought to bear in finding fair solutions from both the environmental and social points of view. The objective is twofold: to make sure that indigenous peoples are recognized as legitimate stakeholders and to help them develop the institutional capacity to become effective stakeholders able to exercise their rights and responsibilities as stewards of their lands and resources.

Endnotes

1. According to Article 1 of the Convention, it "applies to (a) tribal peoples in independent countries whose social, cultural and economic conditions distinguish them from other sections of the national community, and whose status is regulated wholly or in partially by their own customs or traditions or by special laws or regulations; (b) peoples in independent countries who are regarded as indigenous on account of their descent from the populations which inhabited the country, or a geographical region to which the country belongs, at the time of conquest or colonisation or the establishment of present state boundaries and who, irrespective of their legal status, retain some or all of their own social, economic, cultural and political institutions." It adds that "self-identification as indigenous or tribal shall be regarded as a fundamental criterion for determining the groups to which the provisions of this Convention apply."

2. The exceptions are represented by the following ecoregions: Caribbean (WWF ecoregion #s 5, 65), where the indigenous populations were wiped out soon after the arrival of the Spaniards; coastal Venezuela (#4), where no ethnolinguistic groups appear to fall within the boundaries of the ecoregion; Galápagos Islands (#123), where human settlements were only established in 1912; and Fynbos (#134), where the situation corresponds to that in coastal Venezuela.

3. The number of *languages* in the world (excluding for present purposes, sign languages, creoles, pidgins, and Romany/"gypsy" languages) can be calculated as 6,611 of the 6,703 cited in *Ethnologue*. As table 3 shows, however, there are more than 6,611 *ethnolinguistic groups*. *Ethnologue* lists 256 groups who speak the same language as one or more of their neighbors, but differentiate themselves by the use of distinct ethnic names. Since the present mapping project focuses on ethnolinguistic groups, not just languages, and thus takes ethnic criteria into account, these 256 ethnic groups were included in calculating the world's total number of EGs (6,611 + 256 = 6,867). For the same reason, the world total also includes ethnic groups who still maintain their distinct culture even though their ancestral language is, or is thought to be, extinct. As far as possible, duplicate entries of EGs across ecoregions were eliminated from the calculations.

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Part Two: Case Studies

CHAPTER 3

Indigenous Federations and the Market: The Runa of Napo, Ecuador

Dominique Irvine[1]

I. Introduction

Indigenous peoples throughout the Amazon Basin are under duress as they confront challenges that are transforming their lives and the landscapes they inhabit. New roads—though often muddy and potholed—have been carved into the remote rain forests they call home and have opened access to outsiders. Even as communities reorganize to ward off incursion by settlers and uncontrolled extraction of resources, changes have been set in motion that tie indigenous peoples more tightly to market economies. As a result they face not only external pressure but the internal challenge of developing new ways to manage, without destroying or depleting, the resource base they have conserved for millennia.

The struggle to develop new land-use models that combine conservation and economic goals is urgent because indigenous peoples' control over their territories is in peril. Threats come not only from lumber trucks, oil rigs, and encroaching colonization, but also from environmental reserves that appropriate traditional lands but exclude local inhabitants from reserve oversight. This case study explores how one group of indigenous people in Ecuador developed new tools to meet these challenges.

Their experience has implications for the entire upper Amazon, where rivers tumble precipitously from the Andes to the lowlands of Colombia, Ecuador, Peru, Bolivia, and western Brazil, and where development pressures have accelerated in the past 25 years. In Ecuador, oil discoveries in the late 1960s led to road and infrastructure development that paved the way for lumber interests, colonization by small-scale subsistence farmers, and establishment of large African oil palm plantations. Newcomers arrived with the notion that the land was unoccupied and unused.

In fact, the band of rain forest in the headwaters of the Amazon River in Colombia, Ecuador, Peru, and Bolivia shelters the largest indigenous populations in the entire basin. Surprisingly, the estimated 104,000 indigenous people of the Ecuadorian Amazon (see table 3.1), which covers only 138,000 square kilometers, are nearly as numerous as the indigenous population of the entire Brazilian Amazon, which has 45 times the land area.[2] Furthermore, 75 percent of the Ecuadorian Amazon is claimed by its native peoples, while only 21 percent of the Brazilian Amazon is similarly claimed.

This relative density is among the factors that make the region a promising place to test the idea that indigenous peoples can play a vital role in continuing to preserve biodiversity. That idea gathered steam in 1988, when a diverse conglomeration of interests formed to protect habitat around Sumaco Volcano and the adjacent Galeras Ridge in northeastern Ecuador. This area has historically been a significant center of settlement by Runa Indians, who have organized several federations of communities to defend their interests throughout the region (see map 3.1). The local federation around Sumaco, known as FOIN, had been working for nearly a decade with the human rights organization Cultural Survival (CS) and others to help member communities strengthen their organization and gain titles to ancestral territories before a major new road crossed the Andes to connect oil-rich Napo Province with western ports. State and international efforts to finish that link became urgent after a devastating earthquake in 1987, but international aid was tied to local efforts to offset anticipated side effects on the Sumaco area, with its unique flora and fauna.

The diverse group of actors involved in this process had interests that only partially overlapped. Many of the fault lines separating them were initially invisible. FOIN, for instance, viewed donor investments in PUMAREN (the Project for the Use and Management of Natural Resources), which is the focus of this case study, in the context of solidifying FOIN's ongoing regional land-titling and training programs.[3] FOIN hoped to develop a sustainable model for extracting renewable resources that member communities could use as an alternative to the cattle herding and cash monocropping that had proved socially divisive and environmentally destructive. By strengthening services to its members, FOIN hoped to increase membership cohesion, attract new communities into the fold, and impress the government and the international community. The model developed by PUMAREN focused over time on a community forest initiative in three Sumaco communities. Participating communities saw the project through a narrower lens: not as a model for others, but as a tool to secure local tenure rights and generate income for local families.

To most donors—including the U.S. Agency for International Development (USAID) and World Wildlife Fund–US (WWF)—FOIN's role was downplayed and PUMAREN and the forestry enterprise were viewed primarily as a community-based effort in integrated conservation and development that would reduce deforestation in a large and important tract of endangered wilderness. To the Ecuadorian Ministry of Agriculture, PUMAREN's forestry project was a cost-effective way to limit encroachment and resource loss in a region where the government lacked effective control on the ground.

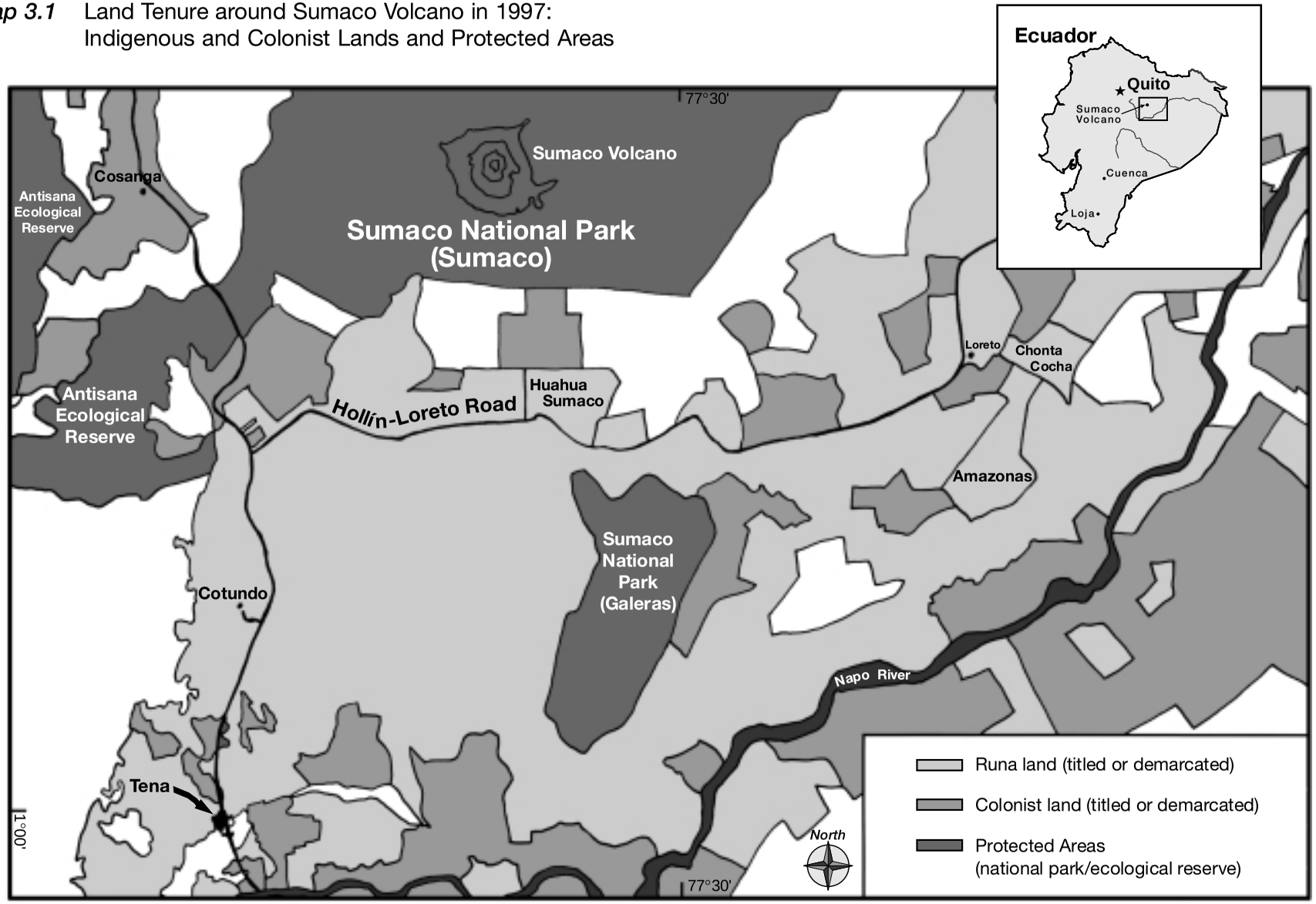
Embedded in these separate points of view are two contrasting visions of how to achieve conservation goals. To the Ecuadorian government and to some environmental organizations, the most effective way to halt deforestation and safeguard biodiversity was the protected-area model,

Table 3.1 Indigenous Population of the Ecuadorian Amazon (estimated numbers)

Quichua (Runa)	60,000
Shuar	40,000
Achuar	2,400
Huaorani	600
Siona-Secoya	600
Cofan	460
Total	**104,060**

Source: CONAIE (1989)

Map 3.1 Land Tenure around Sumaco Volcano in 1997: Indigenous and Colonist Lands and Protected Areas



Map by D. Irvine/Inset map from Cartesia Software

in which the state appropriates a core zone ringed by local communities that form a buffer zone as a first line of defense.

In contrast, the indigenous organizations saw themselves as defending ancestral territory of which they form an ongoing part. The distinction between these two approaches and their long-term implications were not recognized fully by local communities or by most donors.

The confusion of long- and short-term conservation and development objectives and the difficulty in getting such a diverse group of interests to work together to implement a concrete plan of action would play a role in how the project evolved. The complexity of the undertaking might have been clearer to its framers had they better understood the project's cultural, environmental, legal, and political contexts.

II. Clarifying the Context

2.1 Indigenous Society and Culture

Quichua-speaking peoples are the dominant indigenous group in the northern Ecuadorian Amazon. An estimated 60,000 live in the provinces of Napo, Sucumbios, Orellana, and Pastaza.[4] Sizable numbers also live across the border in the rain forests of neighboring Peru and Colombia. Although they now make up about 40 percent of the total Amazonian population, they claim about 75 percent of the land area as their territory, enough to continue living at the same relatively low densities using traditional management practices described in Section 2.3.

Calling themselves *Runa*, or the People, they are often referred to as Lowland Quichua. Both names are somewhat misleading. Although the Quichua language is the native tongue of many Andean highlanders in Ecuador, Peru, and Bolivia, strong evidence suggests that the Runa are unrelated to these groups. Moreover, beneath their shared language and economic system, significant internal cultural diversity also exists among lowland communities that belies surface similarities.

Both linguistic and historical data indicate that the Runa of the Amazon are an amalgam forged from a multitude of cultures that existed in the region prior to the sixteenth-century Spanish Conquest. The exact number of distinct peoples is unknown, but early Spanish expeditions chronicled those they encountered. Many groups were described, and they spoke a multiplicity of mutually unintelligible languages. Some were small and dispersed; others numerous and more densely populated. Some wore painted garments, others went naked, still others were adorned with large gold plates.

The Spanish Crown divided the upper Amazon into *encomiendas* and awarded these royal concessions to Spaniards entitled to collect tribute that depended on the mix of local resources or skills. Some villages were commanded to pan for gold; some to weave cotton cloth; and some to extract fiber from *pita*, a forest plant related to pineapple (*Aechmea magdalenae*). Archives record that the "King's men" were cruel in this region even by Spanish standards—suicide rates rose, and some women reportedly killed their newborns rather than raise them under such desperate conditions (Muratorio 1991, Irvine 1987). Organized resistance was recurrent, each attempt brutally repressed. Populations plummeted further as smallpox epidemics swept through the area. Between 1577 and 1608, the number of indigenous people was reduced by almost 80 percent (Irvine 1987).

During these violent times survivors of different ethnic groups either decided—or were obliged—to live in mission villages where Quichua, an Andean language, was a *lingua franca*. Spanish visitors during the 1600s and 1700s reported that villagers still spoke their native languages within their ethnic circles, while communicating with other villagers in Quichua. By about 1800, most inhabitants had lost their original languages and had forged a new Runa identity.

That amalgam, however, was far from uniform. Each mission village was a crucible for the ethnic groups in its area. Today, the Runa recognize three main zones that reflect discrete cultural and linguistic blends. The southern part of their territory, in what is now Pastaza Province, is home to the Canelos Runa, who are descended from Shuar, Achuar, and Zaparo speakers.[5] The northern part, containing the Napo watershed, has two zones, corresponding roughly to elevation. The native languages of the Quichua speakers there are not fully documented, and may be lost forever. The watershed above 600 meters came to be inhabited by the Napo Runa, clustered around the mission towns of Archidona and Tena.

Lower elevations are recognized centers of the Loreto Runa, descended from mission towns around Loreto, Avila, and San José de Payamino.

These three zones have distinct mythological traditions, and their elaborate ceramic heritages are readily distinguishable in form and design. The detailed and colorful decorations on *chicha* pots and bowls made by Runa women in Pastaza contrast with the simple but elegant, unpainted ceramics and modestly painted gourds crafted for the same beverage by women in Napo near Loreto. Runa from each area speak dialects that vary significantly in grammar and vocabulary, linguistic differences widely recognized by the Runa themselves as markers of identity.

Despite these cultural differences, Runa subsistence economies share many similarities across ecological zones, and probably have long done so. Principal crops of manioc and plantain are interplanted with minor crops and fruit trees in small clearings, which are then allowed to revert to forest after one or two harvests. Largely unknown to outsiders, the upper Amazon has been identified as a major domestication center for harvestable crops from a variety of rain forest trees, including the peach palm (*Bactris gasipaes*), which must be planted to reproduce. Hunting, fishing, and the collection of native plant products provide a varied diet, and all other necessities of life—medicines, construction materials, fibers, firewood.

The Napo Runa are much more densely populated than other Runa groups in the province. Roads entered their territory in the 1960s, and development pressure hit them earlier and harder than populations to the east. At first they formed new villages in old hunting territories; then they began to migrate to unsettled areas within Loreto Runa territory and farther downriver all the way to the Peruvian frontier. As hacienda owners, peasant colonists, and the church swallowed bits and chunks of their home territory, displaced Napo Runa families and the young seeking land that was not overcrowded spilled north and east, forming an indigenous colonization front. At times colonization was a result of conscious policy by indigenous organizations. Other times, families spontaneously resettled. With populations on the move, intermarriages of Runa from different cultural zones increased.

Boundaries, once distinct, have blurred. The area around Sumaco marks a recent border shift between the Napo and Loreto Runa. Before the Hollín–Loreto leg of the new trans-Andean road was built, the Napo Runa hunted west of the Pingullo River, and the Loreto Runa stayed to the east. Now Runa villages along the road are often a mix of the two groups, and the three villages involved in the PUMAREN project reflect this diverse background.

2.2 Organizing to Deal with Outsiders

Other changes to Runa life have accompanied contested land claims and shifts in settlement. People have reworked how they organize themselves as communities and their relation to the outside world. One of the foremost developments has been the growth of regional indigenous organizations since 1964, when the first major threat to traditional land tenure materialized. Following the Agrarian Reform and Colonization Law enacted that year, peasant families began to spill into the western fringe of the Amazon headwaters from Napo in the north to Morona–Santiago in the south, where the Shuar reacted by organizing the first federation with support from Salesian missionaries (Rudel 1993).

Petroleum development intensified the incursions and extended the pressure to organize among Runa deep in the interior. Exploration in the late 1960s hit pay dirt in Napo Province. By the time Ecuador joined OPEC in 1973, the landscape around Texaco's concession—between Lago Agrio and Coca—had been transformed. Roads to bring drilling equipment in and to service the new pipeline that snaked like a giant anaconda from the Amazon to the coast also opened the way for peasants hungry for land and jobs. State-sponsored and spontaneous colonization poured into the area at the fastest rate in the world. Settlers cleared farms in long swaths as many as five rows back from the dusty roads. As roads proliferated, deforestation relentlessly kept pace.

North and south, dispersed communities were bewildered to learn that the newly altered and unfamiliar framework of Ecuadorian law affected their rights, and they slowly developed responses. Lands held under customary tenure for centuries were suddenly subject to a maze of rules and regulations that voided traditional rights and imposed demands that had to be met to prove ownership.

The federations that formed to confront this situation were headquartered in the towns hardest hit—from Tena to Coca to Lago Agrio. Because the young men who led these federations were accustomed to town life, conversant in the ways of white people, and schooled in reading and writing, the institutional structures they created did not spring from existing indigenous social organizations. What emerged was a new kind of intermediary between subsistence-level, initially illiterate communities and government ministries.

Federations were based on democratic Western models in which communities elected the leadership—presidents, vice presidents, secretaries, and treasurers. As federations took root, they branched out from working on land rights to a variety of other problems ranging from agriculture to health to bilingual education. Often dependent on international foundation funding, the federations resembled a cross between a grass-roots membership organization and a nonprofit nongovernmental organization (NGO).

Eventually representative federations formed in all the Amazonian provinces in Ecuador. As they gained strength and experience, they began to organize tertiary institutions to deal with the political problems of all indigenous people in the region. In 1980 an Amazonian confederation, CONFENIAE, was formed. Allies were also sought at the national and international levels. In late 1980, CONFENIAE joined with ECUARUNARI, a highland Indian organization, to coordinate activities through a national indigenous council called CONACNIE. By 1994 this had evolved into a confederation of Ecuadorian Indian organizations called CONAIE, which now serves as a national umbrella organization. Realizing that the problems of Amazonian Indians spilled across national borders, CONFENIAE also met with indigenous organizations in the neighboring lowlands of Peru, Colombia, Bolivia, and Brazil. COICA, the Confederation of Indigenous Organizations of the Amazon Basin, was established in 1984.

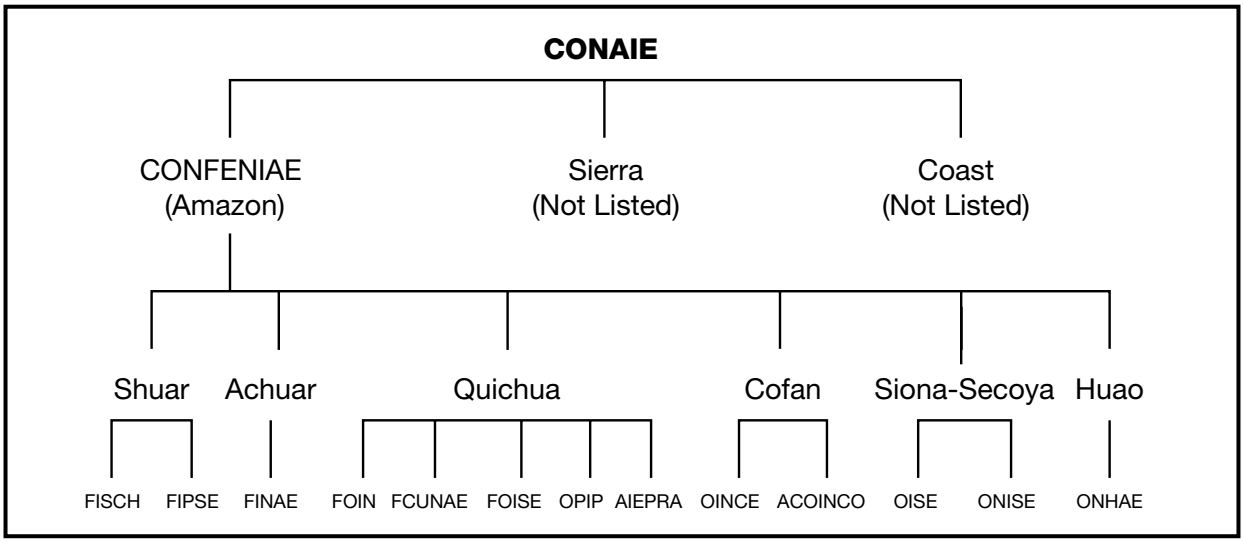
The multitiered structure of organizations (see figure 3.1) led to unprecedented interchange among indigenous groups. A new indigenous consciousness and identity emerged that transformed the debate between local communities and the Ecuadorian state. This evolving consciousness has focused on two principal concepts—territoriality and self-determination—that call for legal titling of ancestral lands and political, cultural, and economic control over them. These demands, initially considered seditious, are becoming more broadly accepted as indigenous organizations become a major force in Ecuadorian political life and receive surprising public support. Between 1990 and 1997, confederations coordinated four major protest campaigns that halted national activity for as much as a week.[6] One of these, a march from the rain forests of Pastaza Province to the Presidential Palace in Quito in 1992, was a brilliant display of public relations and grass-roots involvement. The march leaders knew that the impending United Nations Conference on the Environment and Development (UNCED) would cast an international spotlight on what states were doing to support indigenous people and conservation, and that Ecuador's government would strive to appear "green." As a result, protesters obtained from the president a promise to title 75 percent of the province as indigenous lands. Now indigenous organizations also have entered the electoral arena and have won numerous seats in the legislature. A former president of CONAIE became Ecuador's first indigenous senator.

2.3 Ecology and Traditional Management, or Agroforestry

The Runa in Ecuador occupy a large though no-longer-contiguous territory that straddles the equator and cuts a transect from the east-Andean foothills to the borders with Peru and Colombia. It includes habitats that range from montane to lowland moist forest, and that represent ecoregions considered to be globally outstanding.[7] According to Neill (1999) these upper-Amazon forests have as many as 300 species per hectare, the highest ratio in the world.

Runa lands in Napo Province descend from over 1,200 meters on the slopes of Sumaco Volcano in the foothills to about 250 meters at the Peruvian border. Communities line the banks of the Napo River from its source, where the Jatunyacu and Anzu rivers merge, all the way to Ecuador's eastern rim. Runa also live along two large tributaries of the Napo—the Coca and Payamino rivers—and many of the smaller streams that drain these watersheds and flow from Sumaco.

Figure 3.1 Indigenous Organizations of the Ecuadorian Amazon



CONAIE	Confederación de Nacionalidades Indígenas del Ecuador
CONFENIAE	Confederación de Nacionalidades Indígenas de la Amazonia Ecuatoriana
FICSH	Federación Indígena de Centros Shuar (Shuar)
FIPSE	Federación Independiente del Pueblo Shuar Ecuatoriano (Shuar)
FINAE	Federación Interprovincial de la Nacionalidad Achuar del Ecuador (Achuar)
FOIN	Federación de Organizaciones Indígenas de Napo (Runa)
FCUNAE	Federación de Comunidades, Union de Nativos de la Amazonia Ecuatoriana (Runa)
FOISE	Federación de Organizaciones Indígenas Sucumbios-Ecuador (Runa) (formerly Jatun Comuna Aguarico)
OPIP	Organización de Pueblos Indígenas de Pastaza (Runa)
AIEPRA	Asociación de Indígenas Evangélicos Pastaza Región Amazónica (Runa)
OINCE	Organización Indígena Nacional Cofan del Ecuador (Cofan)
ACOINCO	Asociación de Comunas Indígenas Cofanes (Cofan)
OISE	Organización Indígena Secoya del Ecuador (Secoya)
ONISE	Organización de la Nacionalidad Indígena Siona del Ecuador (Siona)
ONHAE	Organización de Nacionalidad Huarani de la Amazonia Ecuatoriana (Huao)

Source: Compiled by D. Irvine.

The total area occupied by Runa has increased during the 30 years since discovery of oil, although traditional homelands have shrunk as outsiders have moved in. Migration also has brought change in how the Runa interact with habitat. In their traditional settlement areas near Sumaco, the Runa cleared gardens along relatively flat hilltops and hunted more frequently than fished. Moving eastward, migrants have adapted their livelihoods to riverine habitats. They build their houses near medium to large rivers where they increasingly farm alluvial soils to grow subsistence and cash crops. Fishing along the banks provides the principal source of protein.

PUMAREN, the focus of this case study, involves an area of traditional forest management. Sumaco is one of the smallest of the Andean volcanoes, with a peak of 3,828 meters. Its symmetrical cone dominates the horizon in the surrounding lowland forests as far away as the provincial capital of Tena. The volcano's slopes encompass significant ecosystem diversity, but the area of human settlement ranges only from 320 to about 1,200 meters. The mountaintop, which contains the only untouched paramo left in Ecuador, remains isolated.

Forests on the flanks of Sumaco and the adjoining Galeras Ridge (where the PUMAREN project is centered) are not only diverse, but unusually rich in endemic species—that is, plants or animals unique to this restricted area. The WWF/IUCN Centres for Plant Diversity Project

has identified the Gran Sumaco and Upper Napo River region as one of 46 top-priority sites in South America for plant conservation (Harcourt and Sayer 1996, 32–33). According to BirdLife International the region of the Napo and upper Amazon lowlands is an Endemic Bird Area, one of 60 identified in South America (Harcourt and Sayer 1996, 39).

In part, the biota diversity is due to the numerous habitat types concentrated in a small area.[8] Some differences result from soil variations. Although soils throughout the area are young, without a developed structure, those in the western section are volcanic while the eastern soils have evolved from a sedimentary base. Studies by the Missouri Botanical Garden of the flora on the summit of the Cordillera de Galeras found endemic plant species that occur only on its limestone outcrops and soils and that do not appear at similar elevations on the nearby but volcanic rocks and soils of Sumaco (Neill 1999; Neill and Palacios 1997).

The forests that cloak the volcano change dramatically in species and structure as rainfall rises and temperature decreases with altitude (Watson and Silva del Pozo 1989/90, 16–18). Annual rainfall varies from 3 to 4 meters per year at lower elevations, to 6 to 8 meters per year higher up. At altitudes above 600 meters, trees grow only 30 to 40 meters tall, but their girth is often impressive, and many reach diameters of 1 meter. Trees in the laurel family (*Lauraceae*) as well as the palm *Wettinia maynensis* are common. Below 600 meters, forest canopy is noticeably taller, reaching 40 to 50 meters, but the trees are less massive. These habitats share less than 20 percent of their species with the higher forest. The diverse lower forest has a thick understory and is characterized by an abundant and widespread palm known as *Iriartea deltoidea*. The Runa call it *patihua*, and consider it one of the most useful trees in the forest. They use the mature fronds for palm thatch and eat the unopened leaf shoots as palm heart. The trunk provides a very hard wood, ideal for home construction posts and flooring. Wedges are cut in the trunks to raise a species of edible palm larvae (*Rhynchophorus palmarun*) that is considered a delicacy. Even the spiny stilt roots become a grater to prepare plantains for soup. The palms are the object of indigenous forest management, which may account for their large numbers (Irvine 1989).

Forest management by Runa peoples has shaped the landscape despite their relatively low population densities (about 1 person/km^2 over the whole territory). For centuries they have lived by alternating short-term crops, grown in agricultural fields, with resources collected from the managed secondary forest that regrows in their garden and from the mature forest that eventually follows—a system known as agroforestry. As people cut clearings and manage successional forests, they have a strong impact on what is easily misperceived by outsiders to be untouched wilderness (Irvine 1989). A typical family that clears one hectare of forest per year and allows it to regrow after planting one crop would cut a square kilometer per century. Estimated indigenous populations in Napo must have cleared significant upper Amazonian rain forest since the Conquest while preserving high biodiversity.

This rate of human clearing, in fact, approximates the current rate at which these forests appear to turn over naturally. The upper Napo is considered one of the world's most "dynamic" tropical forests. Its trees typically grow quickly and die young. One scientist estimates that the average life expectancy of a tree in this region that reaches adult size—10 centimeters dbh (diameter at breast height)—is only about 64 years (Neill 1999). He concludes that "the relatively high dynamism reported for forests in Amazonian Ecuador may explain the high frequency of canopy gaps and the relatively few large trees, as compared with other tropical forest regions such as the Guyana shield area and Borneo in southeast Asia."

Historically, Runa families have lived in houses dotted through the forest, and have cut small clearings to plant their basic crops—manioc, plantains, and peach palm. As crops grew, the Runa carefully and selectively weeded their gardens, protecting what was valuable. This management set the stage for the growth of a diverse fallow forest filled with useful species. Over 90 percent of the species in these traditionally managed landscapes were known and used by the Runa. Supplying food, medicines, and building and craft materials, forests supported a healthy life for humans with little trading or market involvement. Indeed, managed areas were more diverse than the natural secondary forests in the region. Fallow forests also attracted certain

game animals that proliferated as they fed on the fruiting trees that people planted or protected (Irvine 1987).

Evidence also suggests that, depending on usage customs, indigenous management affected some forest areas more than others. Lowland forests were probably preferred to higher ones since Runa gardens were generally cleared below elevations of 600 meters. The higher parts of Sumaco Volcano were seasonal hunting grounds for a variety of Runa communities. Small gardens were cleared there only occasionally, to supply food for people visiting their *purina huasi*, or small hunting houses.

2.4 Shifts in Tenure, from Custom to Law

Traditional Runa tenure relations provided the security and flexibility needed for sustainable management of rain forest resources by future generations. Large community territories afforded ample space for gardening and hunting. Community boundaries were not demarcated but were well known and recognized. Individuals within a community negotiated directly with their neighbors to obtain land for gardening and for access to hunting and fishing areas. Such usage rights were widely respected by other indigenous communities, and provided the inhabitants of each community with a degree of control over resource extraction by outsiders. Disputes were resolved internally.

This customary system has been superseded by an evolving patchwork of Ecuadorian law. Ecuador's native Amazonians must negotiate a maze of laws that fall into three categories: those specific to indigenous communities, those regulating tenure for agricultural lands, and those governing forest areas. Usufructuary rights and responsibilities vary by category. Resource rights are divided by the state and apportioned as it sees fit. For example, Ecuadorian law assigns subsoil sovereignty to the state. Concessions may be (and are) granted to companies to explore for and extract petroleum or mineral resources despite the wishes of the individual or group holding surface rights. Not only do applicable laws differ, depending on category, but so do the institutions that oversee land titling.

Indigenous Land. Ecuador's Law of Comunas, established in 1937, provided a legal framework for indigenous communities to keep control over resource use. Few communities in the Amazon lowlands knew about or took advantage of this provision, however, given the lack of state administrative presence, the complicated and expensive procedure for gaining title, and a functioning traditional system to regulate resource use. When oil exploitation opened the rain forest wide to other groups 35 years later, the window of opportunity had severely narrowed if not closed. Neither the state nor new settlers knew existing community boundaries, and neither understood nor respected indigenous systems of coordinating forest use. As the Runa scrambled to understand Ecuadorian rules, they found that the legal landscape had changed. Many, often contradictory, laws appropriated their territory and ceded areas to colonists for agriculture, to oil companies for petroleum extraction, to lumber companies for forestry, and to the state for protected areas. Indigenous populations faced the daunting task of mastering the rules of engagement on several battlegrounds at once.

Agrarian Reform and Colonization. The first risk many indigenous communities faced came from the deluge of settlers during the 1970s. Roads and infrastructure cleared the way into the Amazon, but public policy opened the floodgates. Agrarian reform laws in 1964 abolished the feudal *huasipungo* system that had kept Andean people in a state of serfdom, and promised to transform the highland hacienda by redistributing land to the poor. The Agrarian Reform and Colonization Act established the Instituto Ecuatoriano de Reforma Agraria y Colonización (IERAC) as an agency to implement the law. IERAC's land-titling policies favored colonization over expropriation, and the Amazon offered a tempting solution. Since so little of it was titled, it must be empty, free, and available. IERAC soon set up offices in each Amazonian province, and much of the land distributed by the agency in its first years belonged to Amazonian Indians rather than hacienda owners.

The 1978 Law of Amazon Colonization put a legal stamp on the policy, superseding previous legislation and setting a national priority on the settlement and occupation of the region in order to relieve pressure in the densely populated highlands. About 85 percent of the 75,000 square kilometers adjudicated from 1964 to 1994 was for

Table 3.2 Protected and Forest Areas in the Ecuadorian Amazon

Protected Areas Above 600 m	Province	Area (ha)	Date Established	Decree Acdo/Resol
PN Sangay	Morona-Santiago	517,765	79-07-26	
PN Llangates	Pastaza/Tungurahua	219,707	96-03-19	
PN Sumaco/Galeras	Napo	205,249	94-04-02	
PN Podocarpus	Zamora-Chinchipe/Loja	146,280	82-12-15	
RE Cayambe-Coca	Sucumbios/Napo/ Pichincha	403,103	70-11-17	
RE Antisana	Napo	120,000	93-07-21	
Subtotal		**1,612,104**		

Forests Areas Above 600 m	Province	Area (ha)	Date Established	Decree Acdo/Resol
BP Hollín-Loreto-Coca	Napo	100,046	87-12-08 87-09-22	#362 #476
BP Rio Tigre	Sucumbios	4,908	91-06-28	#322
BP Llanganates	Napo/ Tungurahua	82,047	91-10-21	#459
BP Antisana, Tambo, Tamboyacu, Saloya, Verde Cocha	Napo/Pichincha	78,188	92-02-21	#100
BP Cumandá	Napo	224	93-12-13	#046
BP Lumbaqui	Sucumbios	95	95-05-28	#029
Subtotal		**265,508**		

Protected Areas Below 600 m	Province	Area (ha)	Date Established	Decree Acdo/Resol
PN Yasuni	Napo/Pastaza	982,300*	79-07-27	
RPF Cuyabeno	Sucumbios	655,781	79-07-26	
RB Limoncocha	Sucumbios	4,613	85-09-23	
Subtotal		**1,642,694**		

Forest Areas Below 600 m	Province	Area (ha)	Date Established	Decree Acdo/Resol
BP Pañacocha	Sucumbios	56,000	94-3-23	#016
BP Estación INIAP	Napo	1,798	92-04-10	#157
BP Venecia	Napo	159	92-06-16	#280
Subtotal		**57,957**		

* expanded May 1992 from 544,730 ha

Table 3.2 Protected and Forest Areas in the Ecuadorian Amazon (continued)

Total Protected Areas (ha)	**3,259,208**	(25% of Ecuadorian Amazon)
Upland	1,612,104	
Lowland	1,647,104	
Total Protected Forests (ha)	**323,365**	(2.5% of Ecuadorian Amazon)
Upland	265,408	
Lowland	57,957	

Abbreviations:

Acdo/Resol	Acuerdo/Resolucion	(Legal Agreement/ Resolution)
BP	Bosque Protector	(Protected Forest)
PN	Parque Nacional	(National Forest)
RB	Reserva Biológica	(Biological Reserve)
RE	Reserva Ecológica	(Ecological Reserve)
RPF	Reserva de Producción Faunistica	(Wildlife Production Reserve)

Source: Data compiled from Vázquez and Ulloa (1997) and from INEFAN/GEF (1996).

colonization, and 60 percent of that was in the Amazon (Sawyer 1997, 5–6). As a result, nearly one-third of the Ecuadorian Amazon—more than 38,000 square kilometers—was titled for settlement by outsiders in the short space of 30 years.

The policy governing Amazonian land was based on the concept of *tierras baldias*, or empty lands, which by definition fell under state jurisdiction. *Baldias* has multiple connotations as a legal term—empty, unoccupied, and uncultivated. Incorporating notions of both use and ownership, it specified that lands with no owner or forested areas uncultivated for longer than 10 years reverted to the state. Indigenous occupation of the forest for centuries and traditional systems of resource management had no legal standing.

Linkage of "appropriate use" to the granting of tenure rights was designed to promote market development, and it quickly transformed the landscape. Colonists were restricted to approximately 50 hectares per family, and had to demonstrate within five years that at least half their "empty" homestead had been brought into cultivation. With limited labor at their disposal, most settlers not only clear-cut forest but had to adopt an easily managed production strategy to maintain tenure. A policy to provide bank loans for cattle raising ensured that vast extensions of forest would become pasture in an eye-blink. Caught in the same vice, Runa families who obtained title under this system also had to clear their lands to hold onto them (Macdonald 1999).

Privatization of tenure to "reinvigorate" the agricultural sector and promote large-scale export crops has gained speed in Ecuador in the past five years, further complicating indigenous recourse to this body of law. The 1994 Agrarian Development Law (Ley de Desarrollo Agrario) abolished both the 1964 Agrarian Reform Law and the land-titling agency IERAC. The new implementing agency is the Instituto Nacional de Desarrollo Agrario (INDA). INDA continues to register and confer legal title; but, unlike its predecessor IERAC, it has no mandate to delimit land, and prospective owners must hire approved surveyors. Even applicants who can afford the new costs face serious delays since regional offices took as long as three years to open, thereby stalling land-titling. The office in Tena, capital of Napo Province, only opened in February 1997; the Coca office for Sucumbios Province was still unopened in late 1997.

Forests. The Law of Forestry and Conservation of Natural Areas and Wildlife[9] puts usufructuary rights to forests under the administration of INEFAN, the Ecuadorian Institute for Forestry and Natural Areas.[10] The law has two broad branches—one for production forests and one for protected areas. Indigenous peoples whose lands fall within INEFAN's purview obtain title or use

rights from INEFAN rather than IERAC, and must meet different demands depending on how the land has been categorized—as protected forest, national park, or one of several kinds of reserve.

The Ecuadorian state claims extensive public land in the Amazon, but has difficulty controlling it. Policies to regulate colonization through planned settlement projects proved to be largely ineffectual, and were swamped by the spontaneous movement of people from drought-stricken regions.

Development of a protected-area network that now encompasses 25 percent of the Amazon (see table 3.2) looks more impressive on a map than on the ground. INEFAN (and previously DINAF, Dirección Nacional Forestal, the Forest Directorate) lacks the manpower and resources to administer such a system and ward off the intense development pressures. Promoting conservation on ancestral, communal, or private lands, which include the majority of forest in the region, has been even harder. Institutional support from the Global Environment Facility (GEF) of the World Bank, the German aid organization GTZ, and others has helped improve INEFAN's capacity, but effective management of conservation areas is unlikely without significant coordination with local communities.

In developing a protected area around Sumaco Volcano, the zone inhabited by communities was redefined as either Forest Patrimony (*Patrimonio Forestal*) or Protected Forest (*Bosque Protector*), removing it from the jurisdiction of agricultural reform law administered by IERAC. Communities could receive tenure directly from INEFAN by presenting a management plan that would be reviewed periodically for renewal. Tenure also required communities to organize forest worker cooperatives to implement the plan, a form substantially different than the *comunas* or *centros* acceptable under Agrarian Reform Law.

III. The Evolution of PUMAREN

For more than five months following the devastating earthquake of March 1987, broken roads and shattered pipelines cut off the flow of petroleum from Napo Province, severing the country's principal source of income. Resources were funneled to hasten completion of a more direct road from the provincial capital of Coca to Pacific ports. The final leg, known as the Hollín–Loreto road, was carved along the flank of Sumaco Volcano. By December, traffic started to move, opening a biologically diverse and little-impacted region to logging and colonization.

During the more than five years of construction, the government of Ecuador never proposed any measures to allay the biological and cultural impacts of the new road, even though the untoward side effects of earlier infrastructure development in the region were well known. So the Runa communities living in the area took two major actions on their own, assisted by FOIN. First, those living at lower altitudes moved from their dispersed forest clearings to villages spaced out along the planned roadbed to discourage spontaneous colonization. Sentinel villages could better monitor incursions and stake out indigenous claims to the land. Second, some people moved from their primary lowland residences to higher-altitude hunting territories to secure rights there.

Both strategies had unintended side effects. Concentrated population meant concentrated land clearing that intensified pressure on the forest around villages and its capacity for regrowth. Those who moved higher up to cultivate mountainous ecosystems found them unable to support traditional forest management. Unable to manage basic subsistence, families turned to cash crops, cattle, and other income sources to buy food.

Local indigenous federations (with support from Capuchin missionaries, nonprofit organizations such as Cultural Survival, and donor agencies such as the Inter-American Foundation) worked with member communities to secure legal rights to this large, traditionally indigenous territory. They never gained significant political support for their efforts, but persistence achieved partial success in land titling. Yet even that success was undermined because the federations had yet to devise a workable strategy to help member communities make the transition to a cash economy.

Even as internal resettlement efforts grew unsustainable, the federations were failing to meet the external threat that had called them into being. When the Hollín–Loreto road opened, colonists spontaneously put down roots wherever the Runa had left a gap. The government even moved earthquake victims into a newly created town called El

Pacto Sumaco. Colonists quickly cleared land for cash crops and began small-scale logging with chain saws and mules. Two lumber companies, ENDESA and Arboriente, then negotiated with cash-starved Runa villages the right to extract whole trees. Villagers thought this would be a painless way to settle outstanding bank loans for cattle raising. The communities were dismayed, however, when loggers who had contracted for prized specimens of copal (*Dacryodes olivifera*) at $4 a tree leveled nearby trees as well, and hauled the booty out on roads cut through crop fields. These practices left some villagers ruined when the company refused to pay for damages. FOIN feared that all their efforts had come to naught.

This early setback, however, stiffened the resolve of local communities to organize their own resource management to generate income.[11] And the earthquake also brought in influential outside actors who tipped the balance of power in the region. USAID funded the bridges to make the Hollín–Loreto road passable, but restrictions imposed by the U.S. Congress conditioned all such assistance in tropical rain forests on mitigation of deforestation along the demarcated route. Among the steps USAID requested of the Ecuadorian government was to make the Sumaco area a protected conservation zone. USAID also provided FOIN with seed money for a land-titling and resource-management proposal to strengthen the ability of indigenous inhabitants to control deforestation in their territory. This was the seed of what would eventually become the PUMAREN project. The following subsections review three phases in the development of natural resource management in Runa territory, moving from land titling and community evaluations in Project LETIMAREN, to the income-generation activities of PUMAREN and its later fragmentation.

3.1 Phase One: Land Titling and Assessment (~1988–1990)

The Federation of Indigenous Organizations of Napo (FOIN) is one of four principal organizations representing Runa in the Ecuadorian Amazon.[12] As of 1997, FOIN represented 101 member communities.[13] Every three years communities select federation officials to carry out programs in land titling, agriculture, and health, and to provide a regional political voice.

FOIN'S Sumaco effort got under way in March 1988 as Project LETIMAREN (Legalization of Indigenous Lands and Management of Natural Resources). Local priorities and those of donors overlapped without coinciding. USAID's principal concern was to prevent deforestation and biodiversity loss. This would occur primarily through establishment of a protected-area model for the region, with supplementary seed funding for FOIN. FOIN's objective was to secure indigenous control over this traditional territory, and then to help member communities maintain control by managing forest resources to earn income without depleting their children's legacy. FOIN's leadership denounced rapid deforestation by logging companies that had signed contracts with indigenous communities and homesteaders along the road. But this deforestation was viewed in terms of loss of indigenous control over resource use that stemmed from unfavorable and deceptive contract terms logging companies negotiated with unsuspecting and unprepared villagers.

The federation also saw the local crisis as an opportunity to develop a response to a regional problem. International attention had spotlighted Sumaco, but incorporation of Napo into the national economy had transformed indigenous land use and tenure throughout the province. Many other Runa communities were struggling quietly out of sight, and FOIN hoped to learn how to help them by developing models from the influx of funding and technical assistance donors had earmarked for communities along the Hollín–Loreto road.

FOIN's leaders decided to form and train a resource management team from a group of recent high school graduates who had participated in the federation's youth leadership program. They would work with member communities to secure land rights and to help develop more sustainable economic strategies as their resource base was threatened.

After training by Cultural Survival and FUNDAGRO (Fundación para el Desarrollo Agropecuario) in social-science data collection and analysis, the team fanned out to survey the 29 communities affected by the Hollín–Loreto road about the legal status of their lands and the impact of logging in the zone. Surveyors would

also conduct a census of the local indigenous population, and evaluate community needs and methods of resource management.

Results were compiled in *Legalization of Indigenous Lands and Management of Natural Resources in the Hollín–Loreto Road Zone of Influence* (FOIN–Cultural Survival 1988). The report showed that out of 29 communities, 9 (or 31 percent) had legal title to land totaling 72,602 hectares. Another four (or 14 percent) had presented documented claims and were waiting for approval of 20,651 hectares. The remaining 16 communities had not been able to obtain title or were attempting to obtain individual family titles to small plots. One of the longest-settled communities in the zone had been trying to obtain title for over 10 years without success.

The 29 communities contained approximately 9,000 indigenous inhabitants. More than 50 percent were under 15 years old, at least half of whom would soon come of age and require land to establish families. The amount of land eligible for legalization was often restricted by the government to that needed by the present adult population, ignoring pressing needs for future agricultural production or for forest range to support hunting and gathering.

Seven centers of outside colonization were identified. These settlements were established despite the accord between the Ministry of Agriculture and USAID that government would not promote colonization in the area. Some colonists occupied areas where individual indigenous families had failed to claim and title the land they used; others were authorized to occupy illegally territory already delimited as indigenous by IERAC under agrarian reform law. The FOIN–CS report highlighted how the Law of Open Lands and Colonization (Ley de Tierras Baldias y Colonización) gave traditional indigenous settlements priority in adjudication of titles. This called attention to the fact that IERAC was not following its own statutes, and that local governments were acting in ways that contravened agreements made by the national government.

Although oil had yet to be discovered in the Sumaco area, the government had assigned exploration rights to multinational companies. The potential threat was of great concern because 19 of the communities surveyed were located inside the Block 7 concession assigned to British Petroleum, and two were inside ESSO's Block 8.

FOIN presented the report to Ministry of Agriculture officials just before the presidential elections to get maximum leverage. The timing was designed to appeal to the liberal presidency of Rodrigo Borja. Based on survey data, FOIN proposed specific government actions to halt indiscriminate logging and promote resource management in the region. The government was asked to expedite adequate global land titles for indigenous communities in the zone and act to halt colonization. One of the boldest proposals called for establishment of an Ethnic Forest Biosphere Reserve in untitled lands that would be managed under formal contract with indigenous organizations, with government support to train personnel and test alternative land-use strategies. This idea was inspired by the Awá Reserve on Ecuador's Pacific Coast.

The report was designed to build on a recent departure from previous indigenous calls for land title. For the first time in the Ecuadorian Amazon, communities were seeking legal title under the rubric of forestry law. In 1987 a band of land bordering the Hollín–Loreto road—land totaling 100,046 hectares and incorporating the principal area of settlement—had been declared "protected"[14] and transferred administratively to the Forestry Directorate (DINAF). As a result, many communities along the road no longer had to deal with IERAC, which for 20 years had shown little political will to process and protect indigenous land titles.

The land-titling process was FOIN's first positive interaction with DINAF, which previously had been perceived to favor industry.[15] Of course, the government now had an incentive to regularize and expedite tenure in the zone to meet USAID's conditions for road construction. If that stiffened DINAF'S will, the LETIMAREN (later PUMAREN) project made DINAF's task easier by providing a framework for interactions with local communities and permitting titling to move ahead as a block. It also simplified another requirement. A community seeking title in an area of protected forest must develop a management plan. DINAF agreed that the 29 indigenous communities along the road could fold all of their plans together through LETIMAREN. The collaboration among communities, FOIN, and

DINAF and its successor, INEFAN, proved effective. By 1992, 55 percent of the communities had secured legal title. By 1997, all except two new ones had tenure.

However, indigenous participation in planning the proposed protected area was far less effective. Government plans to conserve the Sumaco area proceeded steadily. Studies of the socioeconomic status of the region's population, the land-use capacity of the zone, and possible management alternatives were carried out by the Ecuadorian NGO Fundación Natura in 1989 (Pereira et al. 1989) and by a USAID consulting team in 1990 (Hanrahan and Pereira 1990). By 1992, a feasibility study carried out with German government support proposed establishment of a national park for Sumaco Volcano and the adjoining Galeras Ridge. In April 1994, 205,249 hectares were officially set aside as the Sumaco–Galeras National Park. An interim institution, Proyecto Gran Sumaco, was established within INEFAN with financial and technical support from the German aid organization GTZ, and offices were opened in Quito and in the regional capital of Tena to help establish the park.

Throughout this process of planning and establishing the park, there was little coordination and a climate of mutual suspicion between the government and the Indian organizations. The government never seemed to take seriously the idea that indigenous organizations were capable of managing a protected area. The lack of any response to FOIN's proposal to form a partnership only deepened FOIN's underlying distrust of government intentions. Unable to engage the process from the inside, FOIN watched park formation unfold from the outside. It continued to insist on a joint management model under a conservation category that recognized indigenous rights to the area, without being able to show (partly because it was not asked to do so) how the idea would work in practice.

This proposal regarding Sumaco reflected a larger strategy being promoted by the regional Amazonian and national Indian organizations in Ecuador. In 1990–1991, CONFENIAE drafted a map that reclaimed existing protected areas in the Amazon as indigenous territory to be jointly managed by local Indian federations and communities in coordination with INEFAN. This proposal was also greeted with silence.

The Sumaco and regional indigenous proposals were virtually identical, and both might have been more persuasive if FOIN had better used its own resource management team. LETIMAREN (PUMAREN) staff members were minimally involved in drafting proposals, or in government negotiations, despite their hands-on involvement with local planning, management alternatives, and the protected-area model. They were on good terms with INEFAN personnel in promoting land titling, and were working closely with local communities to develop forest management plans. As for theory, the LETIMAREN team had been immersed since completion of the community survey in learning resource management. Indigenous-to-indigenous training had been used to help Runa staff overcome suspicion of conservationists' motives. The team had visited other indigenous experiments in resource management being carried out by the Awá in northeastern Ecuador, by the Kuna PEMASKY project in Panama, and by the Yanesha in the Peruvian Amazon. Kuna trainers spent four months instructing the team in conservation models (putting into perspective the different conservation categories then in use) and in different management alternatives that local communities might consider (including agroforestry, tourism, and community forestry). At the same time, team and community members began to learn field techniques for inventorying forests and planning their management. From these experiences had emerged an interest in community forestry that would take shape in phase two of PUMAREN. Yanesha trainers from a forestry project in Palcazu, Peru, would visit twice to aid assessment of this alternative.

None of this knowledge was tapped in responding to the park proposal, however, because FOIN and its regional confederation discounted the team as young and politically inexperienced. As a result, indigenous organizations framed their proposals rhetorically and were unable to provide specifics to show the government and the public how joint management would work.

3.2 Phase Two: Community Planning (1991–1995)

As land titling moved forward and began to occupy less time, project staff began to apply what they had learned from the Awá, the Kuna, and other indigenous trainers by helping communities

develop income-generating activities that were economically and environmentally sustainable. By 1991 LETIMAREN had been renamed PUMAREN (Project for the Use and Management of Natural Resources) to reflect this new thrust. The focus of training now shifted to community members as the PUMAREN team helped local groups assess their resource bases and tried to identify those able and willing to participate in a model enterprise. PUMAREN staff had leeway to get the enterprise up and going, but were ultimately responsible to FOIN, which held the purse strings for donor money. WWF joined CS as the principal institutions providing financial and technical support during this phase.

All the parties involved in planning the community forestry enterprise set out to keep the project as small and simple as possible. Three villages interested in developing a community forestry enterprise on their lands were selected (see table 3.3). The federation's criteria for participation included (1) a demonstrated ability to organize as a community and carry out planned activities; (2) forest reserves that the community was willing to manage jointly; and (3) access, or planned access, to a road.

Each of the three communities agreed to set aside a forest reserve for common management, leaving enough land for member households to work their own agroforestry plots. Logging in these areas was intended to supplement and not replace each person's agricultural work, and designated forest reserves comprised only 6 to 18 percent of each community's total land area. Within these management areas, logging would only be permitted in specified sections where logging could be done efficiently and with minimal collateral damage. The community of Huahua Sumaco, where steep slopes were common, set aside only 24 percent of its reserve as suitable for timber extraction. The flatter terrain of Amazonas and Chonta Cocha allowed those communities to target nearly half their reserves.

To keep capital investments and environmental impacts low and to reduce the tasks that had to be mastered, advisors proposed that chain saws with guides be used to cut trees and mill planks in the forest, so that wood could be more easily toted out with mules. However, as the project took shape a more elaborate vision began to emerge. Forestry consultants hired by PUMAREN argued that the only way to cover the communities' man-

Table 3.3 Population, Area, and Forest Reserves of Three Communities in the PUMAREN Forestry Project

Community	Population (Number of Families)	Total Area (km^2)	Area of Forest Management (km^2)	Operable Area		Commercial Volume m^3/ha/yr
				km^2	% of total area	
Amazonas	NA (126)	48	6.6	2.8	5.8%	83
Chonta Cocha	170 (40)	22	2.0	1.0	4.5%	139
Huahua Sumaco	250 (44)	28	5.0	1.2	4.3%	123

Population from unpublished FOIN data, June 1997.

Area and volume statistics from Rubio, et al. (1995).

agement costs was to develop a business plan that targeted an export or a national market that could absorb a wider variety of tree species, offer better prices, and bypass middlemen. The relatively modest scale of the initial proposal soon expanded as dryers, carpentry equipment, milling gear, and a processing center to house them were proposed as a way to add value to local wood and produce high-quality, planed lumber for export. The cost of acquiring this infrastructure while training novice workers to operate and maintain it would quickly become substantial.

By industrial standards, the envisioned enterprise looked miniscule, but keeping it supplied with wood to fulfill contracts with demanding buyers would require the communities to adopt socioeconomic models that were completely new to them. The communities would have to learn to work together as a team and pool forest resources to generate the volumes needed since preliminary inventories of their trees made it clear that none had sufficient reserves to justify a stand-alone enterprise.

Although the upgraded project would be demanding, it seemed doable, and all parties decided to move ahead. However the shift in project focus left little wiggle room for mistakes and proved to be more difficult to implement than either the advisors or the community members had anticipated. Some of the challenges were common to timber enterprises throughout the tropics. For instance, there is no developed market for the lesser-known woods that make up the majority of tree species found in rain forests. This problem was exacerbated in the PUMAREN project because the forest reserves of the three communities comprised different ecosystems and therefore different kinds of wood. Huahua Sumaco's land ranges in elevation between 1,000 and 1,400 meters, and is characterized by Premontane Rain Forest growing in volcanic soils on dissected mountainsides, often with steep slopes. Rain falls throughout the year and totals 4 to 6 meters annually. Many of the tree species found there and higher up on the mountain are not found in either of the other two communities even though they are common near Huahua Sumaco. The woods of Amazonas and Chonta Cocha grow at elevations below 400 meters, are rooted in sedimentary soils, and are classified as Tropical Moist Forest. Joining forces would, indeed, boost the amount of timber a pilot project could process, but the diverse makeup of that wood would make marketing much trickier.

The expanded project also intensified the importance of training in both forest management and business skills. Forest management was relatively easy for community members to grasp and master since they had extensive knowledge of their land and its habitats. Even so, inventorying trees to identify marketable species and drafting final management plans that adjusted harvesting methods to regeneration cycles fell behind schedule. Many of the snags were the result of not delegating sufficient control of the process to the communities who were expected to operate the enterprise once it was up and running. By the time phase three of PUMAREN was scheduled to start, only the community of Huahua Sumaco had finished a management plan.

This did not bode well for other aspects of the project that did not rest on a solid foundation of prior community experience. As a later study by regional indigenous organizations of income-generating community projects would show (Smith and Wray 1996), business administration and marketing skills are difficult to graft onto the trunk of a "gift economy"—one that is based on subsistence and reciprocal exchange. In the case of PUMAREN, market experience varied widely among the three communities. Huahua Sumaco was the most closely linked to and dependent on markets, and its local project leaders proved to be very entrepreneurial. However, even they had difficulty picturing who their customers would actually be. For the business to flourish, the communities would need substantial and sustained technical support.

Because the economic challenge was understood to be daunting, it received much of the focus of project advisors and participants. Unfortunately, the social challenge was not so well understood. What looked like a hill was actually the summit of a mountain enveloped by clouds. Even the federation and villagers were unaware of how massive the hidden obstacles might be. The communities were selected, in part, because they had shown the ability to mobilize to protect their land. Yet they had not had much experience working with each other, which is what they would have to do in processing and marketing if the project was to be economically viable.

This kind of cooperation would have been a challenge even if only one community had been involved. Members were accustomed to working individually or as a part of household units. Although kinship relationships often extended beyond the village and tied households together, families in these three communities had few significant links with one another. Building relationships, while conceivable, would take time and effort, which a tight project schedule might not permit. Had there been a more conscious effort to build on existing ties and customary patterns of organizing work, a different economic model might have evolved that did not rely upon a strained partnership between unrelated communities.

As the communities and the federation struggled to find their common footing, factors over which they had little control continued to trip them up. Even land tenure proved to be thornier than expected. Chonta Cocha, in particular, was unable to obtain legal title. FOIN, based in Tena, was able to facilitate the process for the communities in that jurisdiction, but Chonta Cocha is located in another administrative unit and had to work with the agrarian land-titling agency in Coca. The delay of working at a distance was further exacerbated when, as Section 2.4 details, the 1994 Agrarian Development Law set up a new agency, INDA, to title land, including parcels that were to be processed under forestry law. More than three years later, the INDA branch office in Coca would still be on the drawing board, paralyzing local adjudications.

As the time neared for active implementation to begin, even FOIN's requirement that project communities have imminent access to roads began to seem overly ambitious. Although Huahua Sumaco was located along the Hollín-Loreto road, the other two communities were not and required construction or improvement of side roads if they were to export their timber. Despite years of effort with the local municipalities, preliminary roadbeds were not upgraded. In December 1994, on the eve of phase three, they were still rivers of mud. Amazonas and Chonta Cocha would each eventually complete the mapping of their borders, marking out individual members' parcels and communal reserves. They would distinguish areas of harvesting from zones to be protected and inventory their resources, but by then PUMAREN itself would be unrecognizable.

3.3 Phase Three: Downsizing and Fragmentation (1995–Present)

In 1995 the project received funding from the United Nations Development Programme (UNDP) for equipment to implement the forest management project. This funded chain-saw mills, carpentry and wood-processing equipment, a generator, and the construction of a processing and storage center. At about the same time, WWF and Cultural Survival withdrew from the project for different reasons, leaving PUMAREN and the communities without technical assistance. CS experienced an organizational crisis that forced it to withdraw from projects in many areas of the world. WWF was operating on a narrow timeline and withdrew when its activities were scheduled for completion. The PUMAREN team was unable to obtain new funding and was forced to downsize when the federation could not pay salaries. Although WWF had planned to be present when equipment purchases were made, delays in the UNDP grant left the communities without support when critical decisions were made. Furthermore, since basic organizational issues had never been adequately addressed, an underlying lack of consensus soon emerged as a significant problem.

The communities had never agreed about exactly where on the Hollín-Loreto road the processing center should be located to maximize efficiency and reduce costs—higher up near Huahua Sumaco or in the town of Loreto, which was closer to the two lowland communities. Ultimately consultants hired by UNDP broke the impasse and chose the Loreto site. Yet even with construction under way, neither Amazonas nor Chonta Cocha had a finished forest management plan or a finished road to haul timber out on. Huahua Sumaco, on the other hand, was eager to start implementing the plan it had prepared and gotten approved. Lacking easy access to the proposed processing center, the community began to clamor for locating the carpentry equipment within Huahua Sumaco. The wrangling only grew more intense when the architect hired to design the processing center underestimated the cost, and construction halted midway as funds ran out.

Ultimately the uneasy alliance splintered, and Huahua Sumaco moved ahead on its own with a redesigned project on a smaller scale. The community succeeded in obtaining use of the carpentry equipment (officially owned by FOIN). They reorganized activities to focus on interested individual community members who were made responsible for, and would benefit directly from, different forestry activities, including care of the mules used to haul wood out and the processing of what had been extracted. To gain experience and benefit the community, participants decided to produce wood for local housing and to construct crates for selling their *naranjilla* fruit crops. Some individuals planned to sell boards, milled with a chain saw, on the local market.

The lowland communities, however, were stalled since they had no support to finish their management plans or revise them midstream. Chonta Cocha, frustrated by these combined setbacks, decided to withdraw. Amazonas continues to wait for the situation to improve, but has not figured out how to reduce the scale of activities from the ambitious plan villagers originally approved.

One institution has partially filled the gap left by the departure of WWF and CS. The Gran Sumaco Project, which is establishing the national park, has provided limited funding and technical assistance. However, until recently its activities have been planned and carried out directly with communities and not with the federation. In the initial phase of park consolidation, Gran Sumaco has worked with three upland communities in the buffer zone of protected forests, including Huahua Sumaco. It has carried out socioeconomic studies and provided broad support to communities in agriculture and agroforestry, and limited support to the forestry enterprise. There are no activities in the lowland zone. Although support to FOIN has recently resumed, initial activities were carried out by hiring individual PUMAREN team members, whom the federation could no longer pay, to provide technical assistance to buffer-zone communities and to train as park guards.

IV. Building Effective Partnerships—Lessons in Scale

Although the PUMAREN project fell short of expectations, what happened must be understood in the context of an evolving effort to build relationships that achieve conservation through sustainable resource management. It is rich in lessons at three levels, with implications that stretch beyond Sumaco to include the whole region.

4.1 The Role of Federations in Community Enterprises

Some of the problems of PUMAREN can be traced to internal contradictions at the core of the federation and its relationship with member communities. The LETIMAREN phase of the project went smoothly, but land titling and surveying communities to voice their interests politically were activities familiar to FOIN and within its traditional scope of operations. Serious contradictions only began to surface during the project's second phase, when the focus switched to developing economic projects.

FOIN knew that action was needed, not only to maintain tenure and benefit member communities, but to strengthen the federation's autonomy. Since its inception, FOIN has required foundation funds to carry out its work and has struggled with the dependency that resulted. The leadership believed it was necessary to find ways to increase their financial independence if they were to set priorities and keep the strategic agenda from being distorted. Two possibilities existed. One was that communities could pay fees to the federation in recognition of its services. This could occur through membership dues or through remittance of a portion of the gains from community projects. However, the communities had never been willing to support the federation in this way. A second possibility was for the federation to become directly involved in economic activities and earn a financial return. Some of the leadership, however, feared that transforming FOIN into an economic entity could undermine its political independence. They also feared that an independent economic structure for community projects would take on a life of its own that might eventually undermine the federation itself.

As a result, the PUMAREN team never received a clear mandate. It was conceived as a technical arm of the federation that would work directly with communities to develop economic alternatives. However, such a unit could play a variety of roles. It could 1) build networks to broker marketing, funding, etc.; 2) provide communities

with planning and technical support services; or 3) establish an economic partnership with communities by taking responsibility for activities such as marketing. FOIN was well positioned to carry out the first role. It had developed a strong national and international network over the years and had achieved some success in obtaining funds. Although links for marketing and investment were weak, new contacts were made as the project evolved. PUMAREN also succeeded in training a core team able to work with communities to evaluate their resource base and alternatives, produce resource management plans, and provide limited technical support. Confusion, however, abounded when FOIN proposed working in partnership with communities to develop income-producing activities.

The federation envisioned that work would start at a small scale, focusing on a few communities. If successful, the model could be shared with other communities, which would become involved over time and learn from earlier experiences. However the economic model proposed by advisors was not a community-based enterprise that other communities could replicate one by one. It required a critical mass of participating communities interacting with one another to succeed. Under this scenario, the PUMAREN community forestry project represented both a new economic model and a new social model. To achieve economies of scale, forestry enterprises must coordinate activities among communities as well as links with regional organizations. Individuals and communities have not traditionally worked in this way, so it never became clear who was in charge of the forestry project. Some of this ambiguity might have been avoided if PUMAREN had been built on underlying social relationships. The two lowland forest communities near Sumaco maintain contact with each other and might have been able to build on that trust to carry out a joint project. Including an upland community without such ties argued for a different approach.

The project shows that greater attention to the nuances of cultural links is required to forge new organizational structures. New group structures are theoretically feasible, but the effort to create them requires significantly greater resources and a wider consensus than was available here. Perhaps recommendations that focus on the advantages of group marketing are inappropriate at this stage until FOIN and its member communities have thought through the federation's economic role and an effective and responsive organizational structure for implementing it.

PUMAREN was one of FOIN's first experiments with a sustainable development project. Its progress has been followed by indigenous communities belonging to other federations in three provinces where Runa claim significant territory. Until now, the federations have worked to promote regional and national policies that benefit their broad indigenous constituency by providing individual communities with political clout. Now they find themselves having to develop the administrative capacity to work on the ground with communities. Clarification of relationships has been impeded by the inherent conflicts of trying to carry out both a political and economic agenda, and appropriate organizational structures are still being developed.

Of course, community forestry is only one of several alternatives being explored, some by communities themselves. The most notable of these was started by Capirona, and then expanded to other communities, mainly near the banks of the Napo River. With support from the NGO Ayuda en Acción, an indigenous ecotourism network called RICANCIE (Red Indígena de Comunidades del Alto Napo para la Convivencia Intercultural y Ecoturismo) has formed to promote community-controlled tourism.

4.2 NGOs and the Myth of Stand-Alone Projects

PUMAREN also highlights the role of NGOs in helping indigenous communities and organizations develop new economic models. NGOs offer technical advice and training. They can link local community projects to a wide network of valuable contacts. They can provide financial backing, especially to buffer the risk of starting new ventures, and help fledgling management find its feet.

However even in a good working relationship—where the local organizations significantly control planning and implementation—three questions must be addressed. First, is the technical advice too ambitious, outstripping the NGO's capacity to provide effective support? Indigenous conservation/development projects theoretically can be

small or large—from household-based to regional in scope. However, difficulty in developing new structures and coordinating multiple layers of organization rises with the grandeur of the conceptualization. Second, is the continuity of support adequate? The more complicated the project is, the longer technical and economic assistance will likely be needed. Finally, does the technical advice match the social conditions? Even in relatively simple projects, planning a time frame that permits communities and organizations to evolve culturally appropriate structures for ongoing management is tricky.

Two international NGOs played a critical role in PUMAREN. Cultural Survival, an indigenous rights organization, helped to establish the project and saw it as an opportunity to strengthen federation capacity to serve member communities. CS focused assistance at the federation level. World Wildlife Fund–US, an environmental NGO, started to work in partnership with CS when PUMAREN zeroed in on community forestry. Together they provided direct financial and technical assistance to FOIN, and helped to establish links with other indigenous projects and support institutions.

Although initially conceived as a small-scale project based on individual communities, PUMAREN soon developed into a formal enterprise requiring the coordination of multiple communities to achieve economies of scale and continuity of supply. To project advisers, the proposed structure was still small-scale and seemed manageable with appropriate training. However the communities had no administrative experience, no commercial forestry expertise, no experience with marketing, and no contacts to build such a network. Furthermore the cost of adding value to harvested timber quickly scaled the project out of direct community control. Local participants were dependent on outsiders not only for training, but for market links and start-up capital.

Development of new regional economic structures creates these kinds of dependencies, which require sustained investment most NGOs are unwilling or unable to give. Where a group of NGOs is involved, support must be coordinated so that delay in one project component doesn't derail the rest. In the case of PUMAREN, CS was able to leverage significant support early on, and was institutionally committed to a long-term relationship with FOIN. However, unexpected cutbacks in its own funding forced CS to withdraw precipitously in 1994. The other major NGO, WWF, had a narrower, short-term commitment to the community forestry project. Unfortunately its support ended at a critical juncture—soon after CS's departure and just before the large UNDP grant arrived. Equipment-buying decisions had to be made, but were made in the absence of agreed-upon relationships with clear responsibilities and an agreed-upon distribution of benefits. The decisions were made despite the problem of appropriate scale, which had been highlighted but not yet resolved.

NGOs often think of a pilot project in conservation and development as a stand-alone model and assume it will be self-replicating once it is shown to work. PUMAREN suggests that the model has to fit the needs of the community implementing it *and* mesh with a larger matrix of social structures if it is to survive and replicate. In this case, the design did not mesh with either the communities or the federation.

4.3 Government, Communities, and the Pyrrhic Victory of National Parks

Since development of a protected area around Sumaco, interactions between government institutions and local indigenous peoples have varied significantly, showing progress on some fronts and persistent problems in others. First, some policy changes have been beneficial. Longstanding federation efforts to acquire tenure for member communities were expedited by application of land-titling categories new to the region. Furthermore, the shift in institutional responsibility away from the agrarian reform agency to the forestry and natural resources divisions (DINAF/INEFAN) constructively linked land titling with resource use. It facilitated the federation's efforts to steer community management plans away from destructive cattle herding and toward potentially sustainable forestry and agriculture.

The relationship between INEFAN and PUMAREN also improved at the local level as INEFAN provided technical support and training to the project team in the development of management plans. Frequent communication has led

to greater trust and better coordination. These links have also provided FOIN with a potentially positive channel for pushing proposals for co-management based on the practical aspects of community economic development, rather than the highly charged politics that characterized previous contacts.

But at the same time, development of a protected-area model has weakened indigenous control over this territory. Establishment of a national park has made indigenous communities and federations just one of many stakeholders. Although able to influence decisions about resource use in the region, they lack the deciding voice that would come from establishment and recognition of an indigenous territory.

The government's Gran Sumaco Project to help establish the park has had a number of side effects. One of them seems ironically beneficial. In working with the single community of Huahua Sumaco, the Gran Sumaco Project showed that PUMAREN's original simple structure for a forestry project was probably on track. Yet by tending to focus its efforts (as has INEFAN) on individual communities within the park buffer zone, the government undermines the coordinating role played by the federation and arbitrarily divides the social fabric of the region by excluding communities in the much larger area outside the park. Because it sees the indigenous population as one among many with interests in the area, the Gran Sumaco Project has also elevated the claims of others within the region. One day the established park may be as magnificently unique as Sumaco Volcano, standing in splendid isolation as a green island in a landscape devastated by unbridled development.

V. The Future of the Region

Indigenous federations have made great strides to be included in the political life of Ecuador. Their leaders have become adept at organizing a variety of successful campaigns that have raised awareness about issues ranging from land claims to the impacts of oil development on indigenous communities. In building a regional, national, and international movement, they have also forged a broader "indigenous" identity that cuts across ethnic boundaries. Their struggle has gone a long way to transform the public's image of indigenous peoples.

A vital part of the campaign for indigenous rights has been the ongoing fight for legal recognition that Ecuador is a "plurinational state"—a country that comprises different ethnic "nations." Indigenous organizations have proposed amending the national Constitution to mandate a decentralized political and administrative structure. The amendment would recognize the cultural heterogeneity of the country and allow local control over economic and cultural development.[16]

That would have significant consequences for the Ecuadorian Amazon, much of which indigenous peoples claim as ancestral land. In the past quarter century, they have already achieved remarkable success in obtaining title to large segments of this territory, largely through the work of indigenous organizations formed in response to development pressures. The proposed political changes would have a greater impact on conservation of the region than any activities with individual communities are likely to achieve. Those interested in conservation of the region's rain forests cannot ignore the indigenous movement as a primary ally in making the changes needed to conserve resources on a landscape scale.

However, implementation of such a far-reaching amendment, or even the less radical proposal to comanage protected areas that make up a quarter of the region, will require integration of the larger indigenous movement with community economic initiatives. The social landscape has changed drastically during the past quarter century, with significant implications for conservation. The relationship of most Runa communities to their environment has been irrevocably altered by development pressures and extensive deforestation that have tied indigenous people more closely to a market economy. Simultaneously, the changing policy terrain has incorporated even remote communities into the national legal structure. In order to conserve the resource base indigenous people have depended on for generations, new economic models—ones that build on an extensive traditional knowledge and practice of forest management—must be created.

As PUMAREN showed, that will require new governance structures. The federations that have played such an important part in protecting indigenous rights and resources have also added new layers to the regional social structure.

However, it remains an open question what their role should be in the evolution of new structures for sustainable development. Do new economic models require transformation of the federations' mission and governing structure, or can new models bubble up through small community-level projects? If federations do not play a role, how will communities obtain the skills needed to carry out these projects and obtain access to marketing, funding, and information networks?

Environmental NGOs must analyze more carefully their strategies to combine conservation and development. In choosing to support community development projects, NGOs need to think about what impact results will have at a wider "landscape" level. Where real regional impact is possible, higher levels of commitment and continuity of support may be justified. Inevitably that means NGOs should look at the role indigenous organizations play and can play in the policy arena. Commitment to a new vision of people's parks requires rethinking past patterns of institutional support and helping to foster institutions that increase community control and capacity and make proposed models for indigenous management of territories viable.

Endnotes

1. The author would like to thank the directorate of FOIN, the members of the PUMAREN team (especially Jaime Shiguango), and community members in Huahua Sumaco and Amazonas for their help in obtaining updated information for this case study. Thanks are also offered to James Levy, David Neill, Matthew Perl, Jorge Uquillas, and Barbara Wyckoff-Baird for their comments on early drafts of this chapter.

2. According to CEDI (1991, 64), 138,935 indigenous people lived in the approximately 6.2 million square kilometers of the Brazilian Amazon.

3. For simplicity, PUMAREN is used here as the name for an evolving project whose first phase began as LETIMAREN (Legalization of Indigenous Lands and Management of Natural Resources).

4. This chapter often uses Napo Province as inclusive of Sucumbios and Orellana provinces. In 1920 the uncharted region east of the Andes known as the Oriente was divided into four provinces, including Napo and Pastaza. Only in 1989 was Napo's northern section sliced off to form Sucumbios Province, and in 1998 Napo was further subdivided to form Orellana.

5. Shuar and Achuar peoples, who successfully avoided being missionized early on, still maintain their unique identities and live in large numbers in western Pastaza and southern Ecuador. Only a few Zaparo speakers have survived, intermixed with Quichua speakers.

6. Since 1997, indigenous organizations have coordinated more major protests (including two in 1999) with a broader base of peasant and labor union organizations.

7. According to Dinerstein, et al. (1995), the ecoregions occupied by Runa include two Tropical Moist Broadleaf Forest habitats and one Montane Grassland habitat. All are ranked as globally outstanding, and of highest regional priority for conservation. The Sumaco region includes all three: #22, Napo Moist Forest (369,847 km^2) in Ecuador, Colombia, and Peru; #47, Eastern Cordillera Real Montane forests (84,442 km^2) in Ecuador, Colombia, and Peru; and #139, Northern Andean Paramo (58,806 km^2) in Ecuador and Peru.

8. The Sumaco region includes 11 Holdridge Life Zones (including transitional zones) ranging from Moist Forest to Wet Forest to Rain Forest, and from Tropical Premontane to Montane and Subalpine Forests (Watson and Silva del Pozo 1989; Hanrahan and Pereira 1990).

9. Ley Forestal y de Conservación de Areas Naturales y Vida Silvestre R.O. 64, 24 VIII 81.

10. Until 1994 they were administered by the Forestry Directory (DINAF) in the Ministry of Agriculture (MAG). Protected areas had little clout vis-à-vis farm interests in MAG, so responsibility was transferred to INEFAN, which specialized in forestry.

11. Huahua Sumaco was one of the communities targeted by loggers. They were the last village scheduled for logging, and cancelled their contract after discussing in PUMAREN project workshops the devastation other communities had suffered. Huahua Sumaco would work with the PUMAREN team as one of the three communities involved in the forestry enterprise that is at the heart of this case study.

12. FCUNAE (Federation of United Communities of the Ecuadorian Amazon) operates from the eastern slope of Sumaco to the Peruvian border. To the northeast, FOINSE (Federation of Indigenous Organizations of Sucumbios) draws together Runa communities that have moved to this center of oil development around Lago Agrio. To the south is OPIP (Organization of Indigenous Pueblos of Pastaza).

13. The numbers vary as communities join and leave. In 1993 about 60 Quichua-speaking communities in the upper Napo claimed membership in FOIN.

14. The area was declared *Bosque Protector*, or Protected Forest, under decrees #362 and #476 in September and December of 1987, respectively, fulfilling a USAID condition to finance road construction.

15. For example, DINAF had done little to enforce its own regulations requiring management plans and permits when timber companies extracted lumber with impunity when the Hollín–Loreto road first opened.

16. "The declaration of a Plurinational State without privatization is one of [our] principal demands. This is not a proposal to divide up the state or generate another state. It is a proposal to construct a decentralized political-administrative structure that is culturally heterogeneous and open to proper participatory representation by all social sectors, particularly those who, for reasons of culture, ethnicity, gender, physical condition, and economic position have been marginalized and excluded from the state's dominant form and scheme of socioeconomic development. This implies … an institutional broadening that encompasses the sociocultural diversity of Ecuador within a new concept of development and citizenship that promotes rather than crushes Ecuador's cultural richness and resourcefulness (CONAIE 1997 [Translation from Spanish])."

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CHAPTER 4

Lessons in Collaboration: The Xavante/WWF Wildlife Management Project in Central Brazil

Laura R. Graham [1]

I. Introduction

In 1990, WWF and the Xavante community of Etéñiritipa [2] embarked on an innovative project to protect the integrity and traditional resource base of the Pimentel Barbosa Reserve in the state of Mato Grosso, Brazil. The project was one of the first attempts to integrate indigenous hunters' and Western biologists' understandings of nature in order to collaboratively construct a game management plan and prevent overhunting (Fragoso and Silvius 1997). The stakes were high for everyone. During the past half century, the Xavante had come under increasing external and internal pressure that had begun to erode the ecosystems of the land they used and threaten the sustainability of their way of life. Conservationists saw that the reserve comprised the largest relatively intact piece of cerrado environment remaining in South America (Leeuwenberg and Robinson 1998), and offered the opportunity to empower the people who lived there to husband its resources.

The project to promote sustainable hunting did not originate in isolation. It was conceptually linked to a broader effort called Project Jaburu that was conceived by an alliance of members from Brazil's Union of Indigenous Nations (UNI), pro-Indian activists from mainstream society, and a Xavante culture broker from the Etéñiritipa community. Beginning in the late 1980s, these parties began to design projects that would match local needs with the agendas of national and international funders. The goal was to help the Xavante become more economically self-sufficient by building on rather than sacrificing their cultural heritage and natural resource base. The hub of Project Jaburu was the Indian Research Center—a short-lived collaboration, with lead funding from the Ford Foundation, among UNI, a university, and the national agricul-

tural research agency. One ambitious project spawned by Jaburu would use funding from the Inter-American Foundation (IAF) to build on subsistence traditions by planting, harvesting, and processing native fruits to generate income and protect habitat. Another concentrated on upgrading reserve infrastructure, including better access to profitable fishing sites. WWF was asked by UNI to support a project to breed and raise game that the Xavante normally hunted. The game management project that eventually evolved with WWF did not officially fall under the purview of Jaburu, but the idea originated there.

WWF representatives who vetted the initial request were receptive for three principal reasons. First, the project was located in the highly endangered cerrado environment. Second, the WWF–Brazil program, prompted by staff member John Butler, was looking for proposals from indigenous peoples that focused on the nuts and bolts of resource management and that appeared to offer potential for real engagement with communities on issues of conservation and sustainable development. The program at that time was periodically being asked to support other types of projects from indigenous peoples (e.g., for land titling or leadership travel) that did not directly support WWF's interests in sustainable management of natural resources. The Xavante project was one of the first proposals for indigenous management that seemed to offer a close fit.[3] Third, the project appeared to have originated within the community itself. WWF committed funds for a three-year endeavor of research, planning, and implementation that seemed straightforward.

As this case study will show, much was not as it first seemed. The route traveled has been longer and more circuitous than expected. The project teetered on the brink of disaster, but survived the unraveling of Jaburu because WWF was flexible enough to allow the project to evolve and because the Xavante, who disagreed among themselves on many things, would not let it die. It began with ideas for captive and semicaptive breeding of white-lipped and banded peccaries. These plans—envisioned by well-intentioned activists who had little understanding of Xavante attitudes toward animals, animal husbandry, or hunting—were quickly abandoned when community members became more directly involved. It soon became clear that game management was a pipe dream without a clearer understanding of wildlife population distribution in the area and how contemporary Xavante hunting practices affect species populations. Research to answer those questions consequently assumed center stage.

Eventually a tripartite program for wildlife study and management evolved. Phase I focused on wildlife population surveys to determine if there was overhunting; Phase II on refinement of the data, including density estimates, to help design a management plan; and Phase III on implementation of the plan the Xavante accepted.[4] As of mid 1998, some eight years after WWF's initial commitment, communities in the reserve had finally approved a wildlife management plan and implementation was about to begin (Fragoso et al. 1998).

Some of the challenges this project has faced and survived can be attributed to the cultural uniqueness of the Xavante; some of the challenges might be expected to arise in work with most indigenous peoples. To better understand what happened, this case study begins with a discussion of Xavante social life and the community's history of interactions with outsiders while under the thumb of state agencies. It then looks at the rise of a new generation of leaders able to adapt to new opportunities when they arose, and the false starts that were made. This is followed by a look at the role of hunting in Xavante society and what made the wildlife management project different than the failed projects around it. It concludes with suggestions about what might have been done better and offers a brief glimpse of the challenges ahead.

II. The Central Brazilian Context

2.1 People and Land

The Xavante, together with the closely related Xerente, form the central branch of the Gê linguistic family, one of four major Amazonian linguistic families.[5] Gê groups span a large area, stretching from the Brazilian states of Maranhão and Pará in the north to the southern state of Santa Catarina.

By tradition the Xavante are seminomadic hunter–gatherers who once exploited a large territory. Today approximately 9,000 Xavante live between the Araguaia and Batovi rivers (the latter

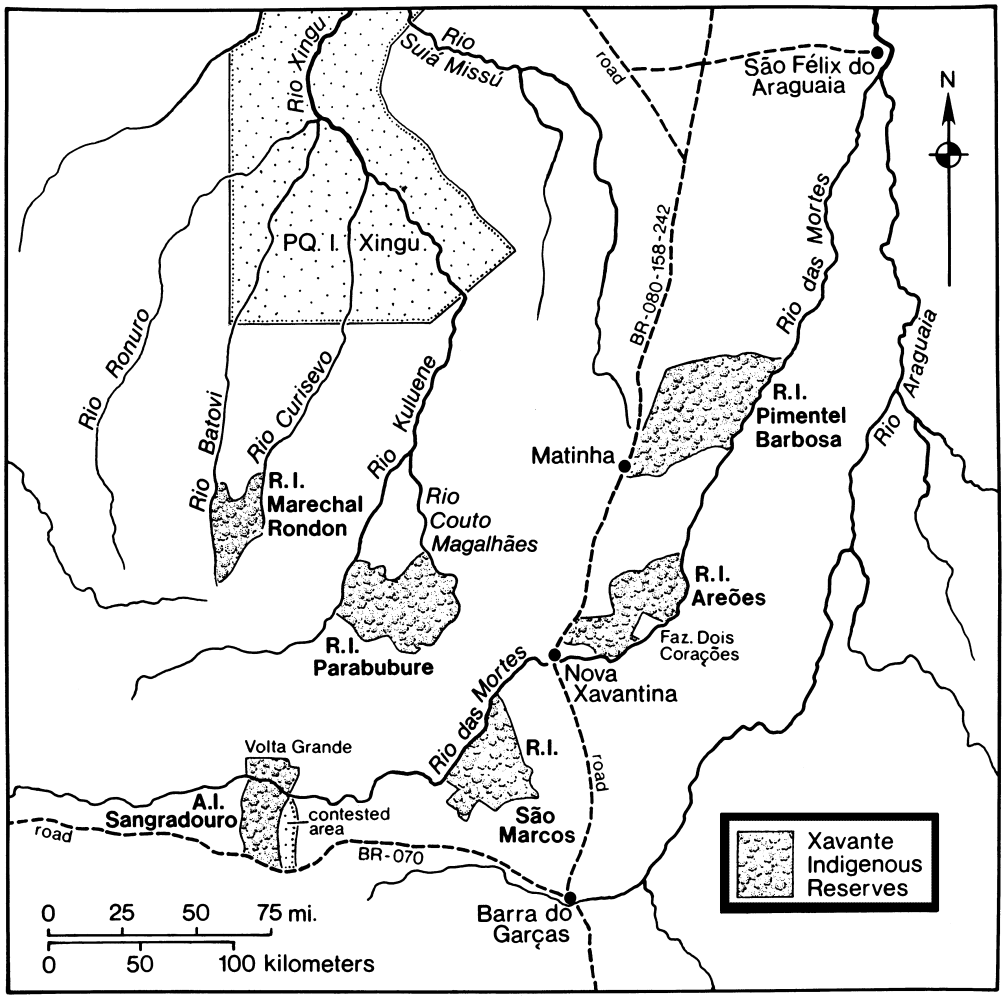
a tributary of the Xingu) in the eastern part of Mato Grosso State on six reserves (see maps 4.1 and 4.2): Areões, São Marcos, Sangradouro, Parabubure, Marechal Rondon, and Pimentel Barbosa. With 329,000 hectares, Pimentel Barbosa is the largest of the six reserves and currently encompasses five communities (see map 4.3). Etéñiritépa (also known as Pimentel Barbosa and Posto Indigena Rio das Mortes in official government communications), is the original settlement from which Caçula, Tangure, and Pe'adzarupré have splintered since the 1980s. The residents of Agua Branca are refugees waiting to recoup their former territory in the area of the Suiá Missú River to the north, which will become a seventh reserve known as Marawaitsede.

The landscape is cerrado: savanna, with gallery forest along riverbanks. Elevation is between 300 and 400 meters. There is a relatively short dry season from May to August, and a rainy season with average precipitation of 1,750 millimeters. Fluctuations may be considerable, however, with yearly rainfall ranging 15–20 percent from the norm and short dry spells that unpredictably punctuate the rainy season (Flowers 1983). Most cerrado soils are moderately to highly acidic; low in nutrients; and high in aluminum, toxic to most crops. To make the soil arable requires considerable addition of fertilizer and lime. The Xavante's former seminomadic, hunter–gatherer lifestyle was well adapted to this environment.

Map 4.1 Location of Xavante Reserves in Mato Grosso State

Map by John Cotter *in* Graham 1995. Reproduced with permission of the University of Texas Press.

Map 4.2 Xavante Reserves in Eastern Mato Grosso State



Map by John Cotter *in* Graham 1995. Reproduced with permission of the University of Texas Press.

It is best to think of the Xavante as a more or less integral group of politically autonomous communities whose members share similar cultural and linguistic patterns. Factionalism is pervasive within and between communities. Agreements therefore can be precarious, and village fissioning is characteristic of the political system (Maybury-Lewis 1974, 165–213). As their history of interactions with outsiders demonstrates, distinct Xavante groups act independently. Cooperation between communities can be achieved to advance perceived common goals, but as the next section shows, the potential for disaggregation and conflict is ever present.

2.2 The Quest for Autonomy and Territory

Xavante are known for their fierce desire for autonomy and self-determination. For more than two centuries they moved steadily westward, in retreat from the advancing frontier of Brazilian colonization. The first historical documents[6] to mention the Xavante date from the late eighteenth century and locate them in what is now the Brazilian state of Tocantins, in territory occupied either contiguously or in common with the Xerente, from whom they were probably indistinguishable. Some time in the second half of the nineteenth century, a number of disparate Xavante factions united to put distance between themselves and the advancing frontier by pushing across the Araguaia River into new territory. They settled in the Rio das Mortes region, in a village known as Tsõrepré. By the 1930s this coalescence had begun to fracture, and various groups splintered off from Tsõrepré to populate a broad area in what is now eastern Mato Grosso. These groups still shared a common aversion toward outsiders and any attempt to establish

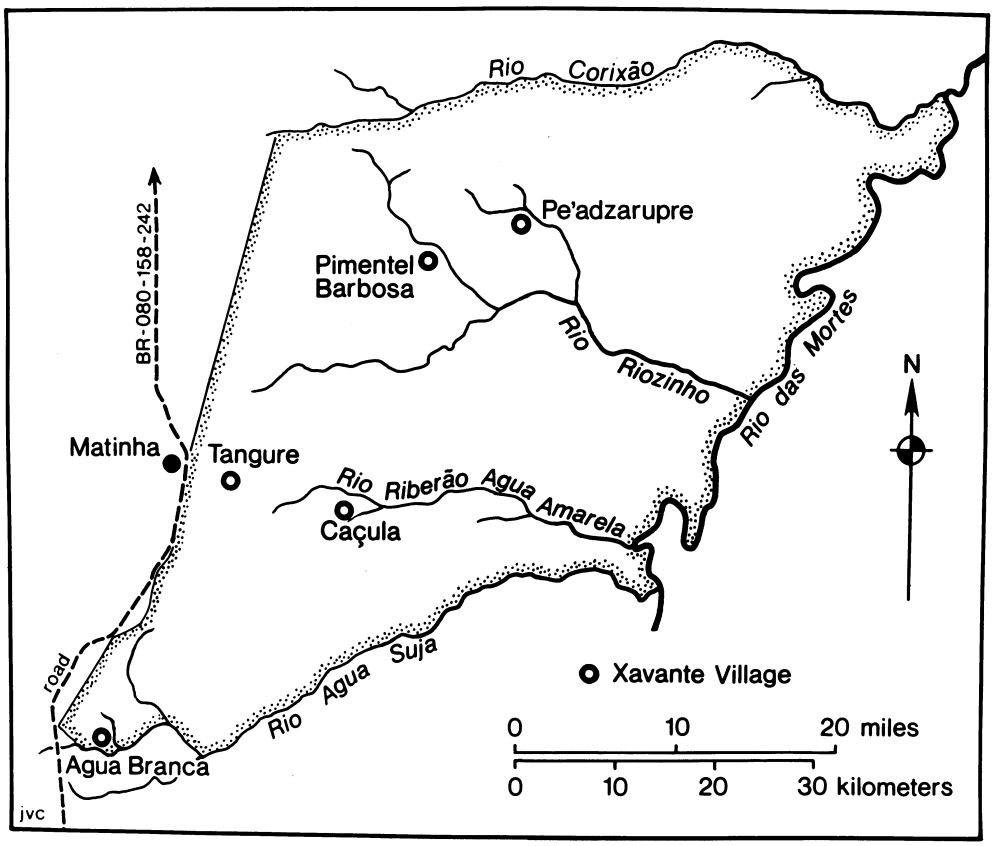
peaceful contact. By the mid-1940s, however, the Xavante faced other indigenous peoples who were firmly settled to the west while the expanding Brazilian frontier had caught up on the east. The Xavante had run out of room for further flight.

During the 1940s the Brazilian government stepped up efforts to colonize the area for commercial use. The Xavante became famous for their bellicosity in resisting these efforts. In 1946, after two disastrous government attempts to "pacify" the Xavantes, representatives of the government's Indian Protection Service (SPI) made the first peaceful contact.[7] The renowned leader Apöwe, whose descendants now reside in the Pimentel Barbosa Reserve, led the Xavante group initiating this contact. By the mid-1960s, all Xavante groups had established relations with outsiders.[8] The population, devastated by disease and violence, had shrunk to at least half its pre-contact size, and now numbered between 1,500 and 2,500 people.

Pacification, then, was not to be confused with submission or peace. During the 1960s and 1970s, there were frequent clashes with Brazilians over territorial claims. Settlers, *garimpeiros* (mineral prospectors), and ranchers flooded into territory the Xavante occupied, in response to government fiscal incentives. Government fraud ceded large portions of Xavante land to colonists and to corporations (Garfield 1996). SPI was replaced by the National Indian Foundation (FUNAI) in 1967, large-scale monoculture (primarily upland rice) was soon introduced, and extensive tracts of savanna forest were cleared for cattle pasture. What is today the Pimentel Barbosa Reserve became splotched with large ranches and small squatter homesteads.

After sometimes violent campaigns (Lopes da Silva 1986; Graham 1995, 37–42), different Xavante groups in Central Brazil convinced the government to recognize their territorial claims. By the end of 1980 all squatters and commercial

Map 4.3 Communities in the Xavante Indigenous Reserve of Pimentel Barbosa



Map by John Cotter *in* Graham 1995. Reproduced with permission of the University of Texas Press.

ranches were removed from areas formally recognized as Xavante reserves. Land disputes, however, persisted. As previously noted, people in the community of Agua Branca have won claim to a reserve of some 165,000 hectares, but FUNAI has yet to demarcate the boundaries and squatters have not been evicted. The Etéñiritipa Xavante are still pressing claim both to their ancestral village of Tsõrepre that lies within a ranch north of the Pimentel Barbosa Reserve's current boundary, and to 80,000 hectares on the east bank of the Rio das Mortes where they had been forcibly resettled by the government following first contact.

Despite considerable Xavante success in laying claim to land, there are other problems. Controlling resources and maintaining the political and social autonomy of the reserves are ongoing challenges. Mineral prospectors, cattle ranchers, and sportsmen continue to trespass. The proposed massive Hidrovia Araguaia–Tocantins project and the increased water traffic and pollution it would bring to the region pose a large-scale threat (Graham 1999). If completed, the waterway would skirt the borders of the two largest Xavante reserves (Areões and Pimentel Barbosa), and disrupt their environment and social life. In June 1997, lawyers from the Brazilian NGO Instituto Socioambiental successfully obtained a federal court injunction on behalf of the two reserves and brought the Rio das Mortes part of the Hidrovia to a halt. That left the problem of policing the current borders. In 1998, as part of the game management project's phase III implementation, WWF supplied the communities of Etéñiritipa and Tangure with aluminum motor boats that could be used for fishing and antipoaching work. The communities of Caçula and Pe'adzarupre received boats from FUNAI.

2.3 FUNAI and the Game of State Funding

As we have seen, relations between the state and the Xavante have been thorny at best. If the Xavante have been forced into a dialogue whose terms others set, they have struggled persistently to redefine those terms to fit their own cultural matrix and meet their own ends. In the mid-1970s, FUNAI launched "Project Xavante," a colossal effort to mechanize rice farming in the reserve area.[9] The project seemed to respond to Xavante needs by justifying their claims to large territories that would be used to aid the national economy. The project also was intended eventually to make the Xavante economically self-sufficient since the traditional hunter–gatherer system no longer sufficed. On one level, it can be argued that the attempt to fold the Xavante into the region's cash-based market economy was a continuation of the pacification policy by other means. But pacification now had a literal as well as a figurative dimension. FUNAI was attempting to placate Xavante leaders, such as the politically astute Mario Juruna from São Marcos, who were gaining national notoriety by spotlighting the government's neglect of indigenous affairs and were exerting public pressure to reclaim their lands.[10]

From the late 1970s to the mid-1980s, the government poured money and energy into Xavante rice cultivation. During the 1981–1982 growing season in Etéñiritipa, FUNAI budgeted $19,159 for a single 110-hectare plantation. Communities in what is now part of the Parabubure Reserve received $35,447. Budgets covered expenses for growing and harvesting the rice; maintaining motor vehicles; and paying salaries to caciques or chiefs, vice-caciques or "secretaries," teachers' aides, and motorized equipment drivers.

The salary figures considerably understate what was actually spent on personnel costs. For example, FUNAI instituted a policy of giving leaders financial "supplements" when they visited administrative offices in Barra do Garças or Brasília. In June 1987 these supplements averaged around $1,300, but varied according to a leader's status and the degree of pressure he exerted on FUNAI administrators. The Xavante earned the status of being the most expensive and exasperating Indians in Brazil.

For Xavante leaders, who aspired to the ranchers' model of agribusiness and material signs of prosperity such as trucks and tractors, having a project conferred considerable prestige, and sometimes wealth. By the early 1980s the possibility of being given leadership of a project began to fuel rivalry among the Xavante and spark divisions in the village. A community leader who obtained a project could supply material goods to members of his faction and salaried positions to a select group. For example, the second major split from Etéñiritipa occurred in 1983 when Sõrupredu departed to establish his own village, Tangure, that would have its own project resources and cattle herd.

Between 1974 and 1984, the number of Xavante villages mushroomed from 7 to 35—a fivefold increase. By 1987, over 50 independent communities had formed, some comprising only a single family. Again, as in the 1970s, when the struggle was to control land, the tendency toward factionalism was aligned with pragmatic goals. In the 1980s the objective became access to the material goods and associated prestige that controlling a project conferred (Graham 1987).

Growing extremely aggressive in their relations with FUNAI administrators, Xavante leaders made increasingly unrealistic demands for attention, equipment, and supplements. Scores of Xavante leaders regularly trekked to Brasília, and some established semipermanent residency in the capital and insisted that FUNAI cover their expenses (Graham 1995, 55–59). Their constant pressure on FUNAI and outrageous financial claims became onerous for the underfunded agency. Eventually FUNAI's tap began to run dry, and in 1988 the agency abandoned the project. Xavante who had become accustomed to their favored status and were financially dependent on FUNAI felt abandoned. Without an SPI or FUNAI to pay heed to the needs that had developed in the 40 years since contact, leadership found itself in a novel position. New ways to meet their financial needs became a pressing issue.

III. The Rise of Cultural Brokers and Project Jaburu

FUNAI's sudden withdrawal of support left the Xavante without means to acquire the Western goods to which they had grown accustomed. Two factors made it possible for Xavante leaders to look beyond the Brazilian government for economic and other support (see Graham 1995, 61–63).

First and foremost were political changes at the national level that reshaped the landscape for all of Brazil's indigenous peoples. The military dictatorship, in power since the coup of 1964, ended in 1986 after a thaw in repression during the early 1980s known as the *abertura*.[11] In the civic space opened during the abertura, pro-Indian groups flowered (see Urban 1985) and UNI, the first independent organization of Brazilian indigenous peoples, was founded (see Graham 1995, 453).

Return to civilian rule led to the drafting of a new national Constitution that included wider legal and economic independence for indigenous peoples. The 1988 Constitution enabled indigenous peoples to establish their own legal associations that could deal directly with outside funding agencies and NGOs. Among other things, that meant foreign funding would no longer have to be funneled through FUNAI, which had a history of expropriating money for its own purposes so that often only a trickle reached indigenous communities. Now money could be sent directly to indigenous associations. In 1988, the Xavante of Etéñiritipa established their own legal entity, the Associação dos Xavante de Pimentel Barbosa (AXPB). By its very name, AXPB may have confused outsiders. Although the association represented the largest community in the reserve, it did not speak for every Xavante community, much less every Xavante.

In fact, it was led by a new kind of cultural broker who kept only one foot tentatively in the community, and without whom the hunt for funding would have been vastly more difficult. The need for a new kind of leadership had been anticipated by Xavante elders for more than a generation, but its arrival would see old problems resurface inside the new opportunities. The ability or inability to account for the changes in context would have important consequences for both Project Jaburu and the wildlife management project.

3.1 The Role of Cultural Brokers

In the years following initial contact with SPI, elders from what is now the community of Etéñiritipa began to see that coexistence with Brazilian national society would require new leadership skills. To prepare a new generation of leaders to mediate relations with outsiders, a plan was developed to send a number of young boys into mainstream society to learn Portuguese and the ways of the whites.[12] They were to learn the new terrain on which battles would be fought to preserve Xavante autonomy and well-being. The elders hoped that these boys would be community guides into the new era.

In the late 1970s several boys were sent to cities to live with Brazilian families and attend school. Six went to Riberão Preto in São Paulo State. After only two years or so, four returned. One, Paulo, remained longer and worked in a shoe

factory before returning to the community in 1984. Another, Zezinho (the son of Milton, leader of a major faction), lived with a relatively well-to-do family and stayed long enough to finish high school. Following their sojourns all returned to marry in their communities, have families, and become active leaders in Xavante social life. Of those who now reside in Etéñiritipa, Suptó is cacique, Paulo is vice-cacique, and Jé Paulo is the current president of AXPB.

Two other boys, Cipassé and Jurandir, were sent to Goiânia. They stayed longer than the boys who went to Riberão Preto, with the exception of Zezhinho, partially because scholarships from FUNAI made it possible. Jurandir completed his secondary education in 1988, married a white woman, and chose to live in São Paulo. His ties with the community are irregular. In 1988, Cipassé married Severiá, an acculturated Karajá woman active in the urban Indian politics of Goiânia. While maintaining their primary residence in the city (at first in Goiânia, more recently in Nova Xavantina), they also kept a house in the reserve (initially in Etéñiritipa, most recently in the newly established community of Pe'adzarupré) for periodic visits.

While in high school, Cipassé became interested in indigenous politics beyond community affairs in Etéñiritipa. His family had controlled Etéñiritipa leadership before contact with SPI, although men from other families also played important community roles.[13] Cipassé's uncle,[14] Warodi, became cacique during the 1970s and continued until being displaced by Milton in 1985. Support for Milton was not unanimous, however, and members of Warodi's faction aspired to regain their former prominence. Warodi and his brothers had groomed Cipassé to be a cacique. During their visits to Goiânia and when Cipassé visited the community, they discussed community politics with him and taught him what they knew (Graham 1995, 61–62). By 1987 Cipassé's role began to change in these family meetings.[15] He began to articulate ideas he was developing through conversations with UNI's inspirational Ailton Krenak, pro-Indian activists, and eventually NGO representatives, ideas concerning projects that would enable the Xavante to maintain economic and cultural autonomy while living side by side with Brazilians. The ideas and the contacts Cipassé was developing persuaded the elders that he had found the pathway for their recently deposed faction to regain its authority.

The senior members of his faction enthusiastically embraced Cipassé's course and the possibility for new types of projects, which were perceived as markers of status and prowess. As his ideas were transmitted to the community, Cipassé earned substantial prestige and his faction began to regain some of its former status even though he did not live in the community. When the Etéñiritipa Xavante established AXPB in 1988 with the help of outside advisors, Cipassé was elected president. As support for Cipassé grew, support for Milton weakened. In May 1991, Milton departed with the members of his faction to join the group in Caçula after charges that goods purchased from sale of the community's cattle had unduly benefited his kin (see Aparicio Gabara 1994, 24). A leadership crisis ensued but did not result in Cipassé's becoming cacique. Nevertheless his outside contacts continued to lend him considerable community support and respect.

In his role as a bicultural broker, Cipassé fit the classic portrait of an indigenous mediator who is an "uncomfortable bridge" between two worlds (Karttunen 1994). Outsiders tended to recognize him as the authentic "chief" and often overlooked other important players. Meanwhile community members increasingly regarded him with suspicion. Like other Xavante leaders who have found themselves in positions to control material goods and outside contacts, Cipassé became a lightning rod for factional disputes. His control over access to outside donors exacerbated tensions internally and would play a role in Project Jaburu's unraveling. Closely guarding the source of his influence, Cipassé tightly controlled information flows. Donors were kept at arm's length from each other so that they lost opportunities to coordinate their efforts by sharing knowledge of what had worked and what had not. According to WWF's John Butler, a great opportunity to deepen future collaboration among donor agencies was lost.

The lack of full information also eroded trust within the community. Many members became distrustful of any project Cipassé promoted. Rumors that he used the community's name to

achieve personal goals and wealth were widespread. They gathered force in the vacuum of hard facts and were made more plausible by his failure to open accounting books or to facilitate contacts between community representatives and outsiders. AXPB increasingly acted independently of the community and its *warã*, the central decision-making forum. Eventually, Cipassé's support dwindled to his core faction, which in 1995 left Etéñiritipa to start a new village, Pe'adzarupré, 15 kilometers away. In 1997, when the association reorganized, Cipassé was not reelected president.

Many of the problems with Cipassé's leadership are not unique to him personally. Assuming the position of a bicultural mediator in contemporary Amazonia is fraught with pitfalls, as scholars have noted.[16] Cipassé is a charismatic figure among his generation. His vision broke new ground, ushering in an era of interaction with outsiders in which the Xavante would play a more decisive role. He established a precedent for project collaboration in which Xavante representatives would design and implement activities. He set a precedent for community members to assume administrative responsibilities such as grant writing, budgeting, and accounting. Without him, Project Jaburu would likely never have occurred. However, in the process of building it up, Cipassé acquired more power than the society sanctioned.[17] This led to his eventual downfall and perhaps to the lack of community support that helped undermine Jaburu itself.

3.2 The Unsustainable Life Cycle of Jaburu

The Jabiru is a stork with extensive range in the Amazon region. Its common name comes from the Tupi/Guarani peoples much farther south, and it is known as Jaburu in Portuguese. For Xavante, the bird has powerful mythological associations as a creator figure and is featured in several ceremonies. So when elders bestowed the name on the project, they signaled its importance as a turning point in Xavante relations with outsiders. It was, after all, the first endeavor the people of Etéñiritipa undertook independent of FUNAI's heavy hand, and they wanted it to fly. Unlike government projects that were ordained from the top down with little indigenous input, Xavante actors played a major role in Jaburu's design and implementation. Most of the projects associated with Jaburu eventually unraveled, with the exception of the WWF Wildlife Management Project. This section will explore what happened and why.

As previously noted, Jaburu was a complex of projects initiated as independent endeavors. Most Xavante, however, conceptualized it as a whole, with two distinct phases (Aparicio Gabara 1994, 127). The first phase, from 1988 to 1991, consisted of economic improvements to the Pimentel Barbosa Reserve, funded by the Denmark-based International Work Group for Indigenous Affairs (IWGIA). Cipassé and his wife opened an office in Goiânia and hired an engineering firm to manage infrastructure improvements to the reserve. A bridge was built to provide the Xavante with access by motor vehicle to fishing areas near the Rio das Mortes that were previously accessible only by foot. Salt magazines and water troughs were installed for Etéñiritipa's cattle herd, and a vaccination program and other veterinary services were started.

The second phase of Jaburu revolved around Xavante participation in the Centro de Pesquisa Indigena (CPI), or Indian Research Center. CPI was founded in 1987 as a collaborative experiment between Ailton Krenak's UNI, several indigenous groups, the Catholic University of Goiâs (UCG), and the state agricultural agency Embrapa. With financial support from the Ford Foundation, the European Economic Community, GAIA Foundation, NORAD, and the Rainforest Action Network, a research center was built on a site provided by the government on the outskirts of Goiânia, and staffed by professional biologists, agronomists, foresters, activists, and other consultants. Among the program ideas they churned out were the seeds for the Xavante Wildlife Management Project and the Native Fruit Processing Project.

A primary CPI objective was to provide Brazil's indigenous peoples with Western knowledge and skills in applied biological sciences so that they could use new technologies in their reserves. Between 1989 and 1992, CPI and the Catholic University offered a training program tailored to indigenous students. Five students were allowed to bypass the *vestibular*, an admissions exam that effectively reinforces class and racial divisions in Brazil's post-secondary schools, and were admitted to UCG's four-year undergraduate law program.[18]

Seven students from diverse indigenous groups, including Kaingang, Krenak, Surui, Tikuna, Terena, Yanomami, and one young Xavante man from Eteñiritipa, Jaimiro, participated to receive training in wildlife management.

The natural resource program, primarily funded by $190,000 from the Ford Foundation, focused on five areas. Wildlife management included topics such as population surveys of target species and husbandry in captivity and semicaptivity. Freshwater ecosystem development included aquaculture of native fishes and shrimps. The third involved conservation and cultivation of native plants. The fourth would develop technologies for collecting, processing, and marketing native fruits and plant essences. Finally, regenerative agriculture encompassed techniques for soil recuperation, organic fertilization, and planting (Aparicio Gabara 1994, 128).

The natural resource program encountered many challenges. Some observers believed that it fell short of its objectives because, among other things, training was inadequate and participants had difficulty coping with the new demands they faced.[19] According to Ailton Krenak, however, the program was a success. It was the first initiative of its sort and offered an unprecedented opportunity for indigenous participants to learn about wildlife management from Western experts. All the students had the chance to learn Portuguese, and acquired important skills from the experience of interacting with members of other indigenous groups and Brazilian national society. The Xavante student, Jamiro, for a time applied what he learned as a research assistant to the WWF-sponsored wildlife management effort in Etéñiritipa. Eventually he chose to become a health care provider. The Goiânia facility itself closed at the end of 1992 when the CPI decentralized in order to implement programs in reserves along the Upper Jurua River in Acre, among the Krenak of the Rio Doce Valley in Minas Gerais, and among the Tukano of the Rio Negro in Amazonas.[20]

Perhaps the biggest disappointment associated with Jaburu, however, is what might be called the "Native Fruit [Misad]Venture." In 1991 AXPB headquarters moved to the Brazilian town of Nova Xavantina, some 250 kilometers from the Pimentel Barbosa Reserve, to be closer to the community yet remain in a commercial center. It was at this time that IAF and WWF initiated support for two programs perceived to be complementary. IAF directed funding toward developing activities related to native fruits. WWF pursued the wildlife management endeavor. As we will see, the outcomes for the two efforts were markedly different.

The idea for the native fruit venture grew out of CPI's brainstorming. It seemed a viable way for the community to earn high profits with relatively low production levels from a renewable cerrado resource. Cipassé flew to Europe to assess the prime target markets and found interest in fruits processed and sold by Brazilian Indians was much greater than anticipated (Aparicio Gabara 1994, 129). IAF funds were used in 1993 to turn an abandoned ranch near Etéñiritipa into a fruit-processing plant. The facility was a white elephant and never operated, for reasons that will be discussed below.

Using European Community (EC) funds totaling $100,000, a state-of-the-art processing plant was built in Nova Xavantina the next year. The switch was justified by the fact that harvests from the reserve were low and, to operate the plant economically, at least 70 percent of the fruit would have to be procured locally (Aparicio Gabara 1994, 131). The town's larger population would also provide a larger pool of labor. Perhaps this was a clue that something was wrong with the idea, that it had failed to enlist enthusiastic support in Etéñiritipa itself. EC funds were also used to remodel AXPB's headquarters, including a cultural center and guesthouse so community members would have a place to stay in town. The fact that funds were spent on infrastructure rather than pressing needs such as training, for example, may also have been a warning that something was awry.

The enterprise was to process a number of cerrado fruits, including baru, jatoba, murici, araticum, buriti, macauba, and piqui. Like the low-tech plant in the reserve, however, this facility, too, never became operational. An independent evaluation in early 1995 would show that no economic feasibility study had been carried out to justify the investment in the factory. And it became obvious that members of AXPB and the CPI staff lacked the training to properly process, package, or market the fruits.

With Xavante unable to manage processing and packaging or even to provide adequate raw materials and labor, there can be no doubt that the fruit-processing venture was a failure. Several factors help explain this and provide contrast for what eventually happened in the wildlife management project. One reason the effort never took off was the failure to root the project in the cultural dynamics of the community. It was a basic flaw in project design that no one wondered what impact the gender division of labor in Xavante society would have on the enterprise. The fruit project placed an unreasonable burden on women, the collectors and processors of food in this society. Xavante women have the least free time yet were expected to bear the brunt of this new labor. Many later problems might have been anticipated if women, who were to be principal actors in implementing the project, had been asked to participate in designing the project.

Although women were enthusiastic at first about the money they would generate, their enthusiasm declined in tandem with the failure of cash flows to materialize quickly (Aparicio Gabara 1994, 129). No one explained beforehand that the market economy demands major start-up costs and labor investments before a profit can be realized. The women also expected other immediate rewards for their labor, such as clothing. As motivation waned, it became clear that workers were not maintaining the sanitary requirements for handling fruits such as pequi. They were also not collecting sufficient surplus to gear production to scale. The fruit shortage was exacerbated because few of the trees that were supposed to be planted for harvesting were in fact planted. All of this implies that the women and the community itself never felt the project belonged to them.

Another problem was that the project rapidly became hooked on relatively high levels of technology without concomitant technical support. One observer noted that no one involved in the enterprise had experience in operating such a facility. Rather than slowly developing processing and marketing skills at a level commensurate with what could be produced by community members with the available resources, project designers separated ends from means. They too quickly aspired to acquire the elaborate infrastructure for success without having a clue about how to attain or sustain it. Echoing what had happened in FUNAI's rice projects, once again acquisition of material goods as a sign of status, in this case the fruit-processing factory, became an end in itself.

After 1994, the IAF and the EC withdrew support for the project. The processing plant remains unused, a monument to an appetite for material goods and to overwhelming ambition. The problems that undermined the fruit project stem from lack of consistent monitoring by funders, technical support, background information, and dialogue among all the parties involved.

IV. The Wildlife Management Project

Whereas IAF and EC funds supported implementation of technological innovations and infrastructure, WWF funding primarily supported research. This began in 1991 when Frans Leeuwenberg, a wildlife biologist contracted by the CPI, initiated fieldwork designed to uncover why the reserve's game populations seemed to be declining.[21] Early on, the Xavante had made it very clear that they were not interested in raising animals in captivity, so Leeuwenberg's work focused on understanding the current natural resource base and how this aspect of it could be improved and managed by the Xavante.

4.1 The Role of Game Hunting in Xavante Society

To understand the dynamics of Xavante game hunting, one must first appreciate how central wildlife has been and is to Xavante life. Following "peaceful" contact, the SPI had tried to transform the Xavante into sedentary farmers (see Flowers 1983, 218–225; Maybury-Lewis 1974). The Xavante, however, abhorred intensive agriculture. The few crops they did plant—principally maize, beans, and squash—played a minor role as "bonus" foods used in celebrations (Maybury-Lewis 1974, 48), and could be sown and left untended while the group took off on trek. Wild roots, nuts, fruits, and vegetables formed the core diet, and fresh game, smoked meats, and fish were the most coveted foods. Game was and still is a centerpiece for many ritual occasions.

Meeting these subsistence and cultural needs has taken several forms. First is dzö mori, or trekking. Traditionally Xavante treks were hunting and

gathering expeditions that radiated out from a semipermanent base village and lasted from six weeks to three months. Treks took place in the rainy as well as the dry season (Maybury-Lewis 1974, 52–59). Trekking bands included entire extended families; women focused on collecting fruits and plants while men focused primarily on hunting and fishing.22 The elders planned these treks so that the community might cover certain terrain and exploit certain resources. The area that a group was able to cover during a year's wanderings was considered to be its territory (Maybury-Lewis 1974, 53). Each community held proprietary rights in common over the area and its products, but did not recognize specific boundaries between its own territory and that of other groups. "[Xavante] felt free to wander out of 'their own' territory if they were prepared to risk a clash with other [Xavante] groups, who might resent the intrusion" (Maybury-Lewis 1974, 53).

Of central Brazilian groups in the 1950s, the Xavante were probably among the most nomadic (Flowers 1983, 53). The Pimentel Barbosa group followed in this case study spent as much as eight months of the year on trek (Maybury-Lewis 1974, 44–45). Around 1970, they began to shift from trekking to intensified rice and manioc production (Flowers 1983, 226). Families continued, however, to take short treks of up to three weeks or so until the 1990s. Leeuwenberg (1994, 11) thought family hunts seemed to increase between 1991 and 1993, while individual hunting declined. This was apparently a blip since family hunts stopped after 1994 (Leeuwenberg, personal communication). Today the trekking pattern has all but disappeared because of the significant reduction of available lands and the growing importance of consumer goods. In the smaller Xavante reserves, such as São Marcos and Sangradouro, trekking diminished even earlier.

Despite the decline in trekking, hunting continues to be very important in the diet and essential to social life. Hunting is fundamental to Xavante identity, particularly for males. Men think of themselves as hunters. Little boys are encouraged to play at hunting, preparing for their future role. Fathers craft small bows and arrows for their sons, who tote them around for target practice on small lizards, rodents, and inanimate objects. Boys begin their career as serious hunters by shooting birds with sling shots. In the bachelors' hut, boys between the ages of 10 and 15 accompany the older men on organized hunting trips. By watching their seniors, they learn how to stalk particular kinds of animals, and to butcher, smoke, and carry the kill. While older men have probably always been more proficient than the young, today's youth know much less than before about habitat and tracking, and elders openly voice concern that knowledge needed to carry on hunting traditions is being lost (Leeuwenberg 1994, 37).

Today most men hunt with .22 rifles, which were introduced during the pacification. Some 15 to 20 percent of hunters still use bows and arrows (Leeuwenberg 1994, 32). In his research Leeuwenberg notes that, contrary to speculations by some conservationists, introduction of rifles did not stimulate overhunting by the Xavante. Nevertheless he observes that 20 to 25 percent of animal kills from .22 rifles are not used. These are principally large animals such as tapirs, deer, and peccaries that are wounded but escape to die later in the bush. A man ceases hunting and returns to the village when he has obtained the maximum weight that he can carry; if he is not far from the village, he may leave his kill and fetch help.

Meat provides a significant part of the diet in all Xavante communities, and game is, without doubt, the most desired food. In fact, the Xavante language has two ways to express hunger. One concerns food in general (*mram di*); the other specifies meat or fish (*toro di*). According to Leeuwenberg (1994, 16), hunted game in 1993 provided approximately 85 to 90 percent of the animal protein in the diet; domesticated chickens, fish, turtle, and turtle eggs supplied the remainder. In the years 1991–1993, Xavante adults consumed 144–255 grams of meat per day (Leeuwenberg 1994, 18).

Xavante use 65 percent of the gross weight of a hunted animal; only claws, bones, and the contents of the stomach and intestines are not eaten (Leeuwenberg 1994, 17). The brain is considered a delicacy appropriate for elder women. When a man returns from a hunt, he gives his share of the kill to his wife or mother (if he is unmarried), who then distributes it to kin and

affines to whom she is obliged to share meat.[23] The practice known as *da-niwari* entails asking for meat or fish from women whose husbands and sons have returned from a successful hunt.

Time allocation studies conducted in 1976–1977 show that Xavante men spent an average of 1.06 hours per day hunting (Flowers 1983; 231, 233).[24] This accounted for 14 percent of the time they devoted to subsistence activities. Data from 1994 indicate that men spend *more* time hunting now, some 25.7 percent of their subsistence activity (Santos, Flowers, Coimbra, and Gugelmin 1997, 553, especially table II). When hunting and fishing are combined, the change is even more striking. In 1976, men hunted or fished for 30 percent of the time they devoted to subsistence activities. In 1994 it was 60 percent.

With the decline of trekking, other forms of hunting have expanded. Individual hunting is the most common, although not the most productive (Flowers 1983, 231). Xavante men always carry their guns and are alert to signs of game when going to and from their gardens, on any sort of errand, and even while riding in motorized vehicles. In 1976, Flowers found that only 21 percent of hunts involving up to three men were successful (meaning some game was bagged), and the average share of dressed meat per hunter was 1.7 kilograms.[25]

Collective hunts may include as few as four men, and often include many more, sometimes nearly the entire adult male population of a community. Xavante maintain that collective hunting is more productive than individual hunting, and the study by Flowers (1983, 232) showed this has been the case. The documented success rate of collective hunting in 1976 was 67 percent, and the average share for each hunter was 4.7 kilograms of dressed meat per day. The higher figures may be attributed to the fact that among the most commonly taken game animals are white-lipped and banded peccaries that run in large herds of 15 to 40 in the cerrado. An individual is lucky to shoot one or two, but a large number of hunters can often head off the herd and give more men the chance to shoot. On the other hand it is also true that a group can fail to encounter any peccaries, and everyone returns empty-handed (Flowers 1983, 232–233). Elders from the patrilineage known as the "peccary lineage" (*uhö* and *uhöre*) recall that lineage leaders once had the power to summon peccary herds (Giaccaria and Heide 1972, 111–112; Flowers 1983, 236). This knowledge may have been lost, although several elders suspect that some individuals still possess certain powers.

Flowers observes that collective hunting may be most efficient when there is high dependence on herd game in relatively open country like the cerrado, where visibility extends a considerable distance (1983, 235). Leeuwenberg's recent data partly supports this proposition (1994, 17; also Leeuwenberg and Robinson 1998). He finds that the two kinds of peccary—white lipped and white collared—constituted 48.39 percent of game kills between 1991 and 1993. Nonherd species accounted for a substantially lower proportion: anteater (*tamandua bandeira*), 19.96 percent; deer (*cervo do pantanal, veado cameiro, veado mateiro, veado catingueiro*), 14.21 percent; armadillo (*tatu canastra, tatu peba*), 10.86 percent; tapir, 4.29 percent; unspecified, 2.29 percent. However when percentages are calculated for volume or biomass, Leeuwenberg (1994, 17; 1997a, 1997b) finds that the ratios reverse dramatically. Nonherding species—mostly deer (28.81 percent), anteater (18.65 percent), and tapir (18.05 percent)—account for 76 percent of the total volume of game meat, while peccaries account for only 30.27 percent. This is a more accurate picture of the relative importance of species the Xavante rely on. It also reflects Xavante food taboos. Capybara, anaconda, and savanna fox (which was consumed in the past) are not eaten despite being readily available in the area.

Men enthusiastically engage in collective hunting trips, some of which form the backbone of important ceremonials. For example prior to the *adaba*, or wedding ceremony, the groom's male kin depart on a hunt known as *da-batsa* that lasts up to three weeks. The hunt ends when family leaders deem that game in sufficient variety and quantity has been obtained to make an honorable offering to the bride's mother.26 When the hunters return to the village, the groom, decorated with ceremonial body paint, carries a huge basket piled high with as much as 150 kilos of smoked meat across the plaza to his bride's household. In one ceremony, the net weight of

game hunted over an eight-day period was 487 kilograms (Leeuwenberg, personal communication). An alternative to the da-batsa is the *tsérére*, a one-day communal wedding hunt involving all adult males in which the meat exchanged is raw rather than smoked.27 The da-batsa is much preferred, but the tsérére can occur in special circumstances and, in recent years, is increasingly common (Leeuwenberg, personal communication). Game must also be supplied during the extended *wai'a* ceremony that places adult men in contact with the spirit world from which they derive power (see Valadão nd; Aparicio Gabara 1994, 36–38).

Because large amounts of game are needed in these ceremonials, hunting parties sometimes trespass onto privately held lands. Xavante men consider lands on the eastern side of the Rio das Mortes, where some 80,000 hectares are in dispute, to be good hunting territory. In some cases this has led to hostilities with landowners.

Another type of collective hunt, known as *du*, occurs during the dry season. Men set fire to the parched grass and undergrowth to drive out game. The hunt usually lasts one day and involves most of the adult and adolescent men, and sometimes boys who reside in the bachelors' hut. Prior to departing in the morning, participants decorate themselves with body paint and assemble in the *warã*, or central plaza, to sing a special song known as *du'u ño're*. The "owner of the hunt" (*aba tede 'wa*) articulates the plan for the day in a formal speech. Men depart together in a fever pitch, either by foot or in trucks. Once the hunters reach the designated starting point, they assemble to hear the "owner of the hunt" reiterate the plan. Two designated seniors, one from each marriage group, or moiety, set off at a trot carrying torches in opposite directions. They periodically pause to set the grass afire in a large arc that is fanned by arid breezes. The assembled hunters then pursue the fleeing game that head to damp areas and watering holes for safety. Men use distinctive calls to notify others of their kill and to summon help. Women often follow behind the flames, collecting forest products such as palm hearts from the charred open fields.

In recent years Xavante became overly reliant on these game drives, using them throughout the dry season rather than at the end as traditional knowledge prescribes. Food supplies and animal habitats consequently have suffered (Leeuwenberg 1994, 32, 41). One result of the wildlife management plan the Xavante would eventually draft would be to return to the elders' methods of determining appropriate times for fire drives.

4.2 Threats to the Game Supply

Paying attention to elders' knowledge is crucial for replenishing wildlife because changes throughout the Rio das Mortes region have significantly affected game populations. A study by the government rural extension agency Empresa de Assistencia Tecnica e Extensão Rural (EMATER) paints a dismal picture of the region's habitat. Farms larger than 100 hectares account for more than half of nearby land. Those 100–500 hectares in size account for 32.25 percent of land in the two districts that contain or adjoin Pimentel Barbosa, and farms larger than 500 hectares account for another 16 percent (EMATER 1989).

Eighty to 85 percent of the surrounding lands have been deforested. Ranchers cleared large areas for pasture or for monocropping soybeans or upland rice. They also introduced several exotic feed-grasses—such as *Brachiaria* spp., *Rhynchelytrum repens*, *Andropogon* ssp., and *Panicum maximum*—that are extremely aggressive and are displacing natural flora (Leeuwenberg 1994, 4). In addition to commercial activities adjacent to the reserve, intrusions for timber or mineral extraction or for poaching have also seriously disrupted game populations within Xavante territory.

The Xavante's increased sedentariness and changed hunting patterns have also affected the game supply. Reliance on subsistence crops that require constant attention and on Western medicine and other consumer goods have made the Xavante reluctant to leave their villages for prolonged periods. Treks have given way to intensive hunting in areas close to villages and have lead to overexploitation there.

During phase one of the project, data collection focused on identification of hunting ranges and the number of each species taken. By extrapolating information from several kinds of data, estimates were made about productivity rates that could be used to measure harvest sustainability. For

1991–1993, Leeuwenberg found that the Etéñiritipa Xavante hunted only some 65,000 of the reserve's 329,000 hectares. He reports that "from February to October [1991], the Xavante had 82 hunting days, of which 85 percent [took place] in an area" within 25 kilometers of the village (Leeuwenberg 1994, 7). This badly disturbed animal populations, and several species basic to the diet risk local extinction.[28] Corollary to the overhunting near settlements is the underuse of large portions of the reserve, which has political consequences. Trekking parties once helped police the reserve's borders, which are now left more unguarded and open to invasion by squatters.

Cattle ranching might seem to offer the Xavante a potential alternative to hunting, and indeed it was government policy for more than 30 years to encourage such a shift. Xavante, however, have little interest in the care of domestic animals. Each community has its own cattle but seems to prefer to hire Brazilians to care for the herds.[29] Xavante think of their cattle as assets that can be converted to cash to repair a truck or buy some durable good, and as an emergency food reserve, rather than as a permanent source of animal protein. Senior men are minimally involved in animal husbandry. When game is scarce and the community "is hungry for meat," they kill and butcher cattle as needed. But cattle are not used to substitute for hunted game in ceremonies. Unfortunately this cultural resistance to cattle does not mean that the reserve has escaped from the ravages of ranching unscathed. Leeuwenberg (1992, 5) reports that approximately 10 percent of the reserve's natural habitat has been severely degraded by cattle since the 1970s.

4.3 Taking Ownership of the Wildlife Management Project [30]

When the project began in 1991, WWF funds, most of which were supporting Leeuwenberg's salary, were routed through CPI. When CPI's Goiânia facility shut down, WWF funds went directly to AXPB. From this point on, WWF's interactions with AXPB were not mediated. The Xavante became more involved in the project as they began to administer its funds and as they worked alongside the field researcher.

Establishing baseline data to determine the sustainability of animal harvests proved to be a complex undertaking. Believing that the project had originated inside the community and that the community would wish to continue monitoring once his work was complete, Leeuwenberg trained community members in appropriate data-gathering methods. This ensured that the accumulated knowledge of experienced hunters, who were also phenomenal trackers, would be tapped, but it also limited what kinds of methods could be used. Trained observers would monitor hunts, record the sex and number of kills and where they occurred, and collect the lower jaws to determine age through tooth wear. All animals brought into the village were recorded, but not all skulls were described since the Xavante break open the cranium to remove the brain. Each of these measurements contained hidden assumptions. For instance, the sex ratio would show how much of the population was female and producing offspring, while the age structure would allow one to refine the projection since the likelihood of reproduction and survival varies with age. A preponderance of young animals in long-lived species would support the likelihood of overhunting. The problem was that not enough is known about the life cycle of some species to have reliable baseline data for drawing conclusions. This was complicated by gaps in new data. In addition to the incomplete skull samples, the Xavante did not save the uteruses of killed females so that a valuable clue to reproductive history was lost.[31]

Establishing population densities per square kilometer and comparing them to game taken over the three years of the study would have negated some of these difficulties. WWF and the Wildlife Conservation Society (WCS), which contributed some funds, were highly interested in obtaining density data, and in 1993 Leeuwenberg tried to comply, plotting out transects of known lengths in four different habitats in order to obtain census data. Three problems surfaced. The number of encounters with game per transect was too low to be statistically significant; several transects flooded during the rainy season and could not be sampled; and finally, the Xavante sampling the trails had no cultural precedent for tracking game without shooting it. Ultimately, the Xavante found that censusing was not, for them, a viable method of data collection.

Most studies of this kind in fact have difficulty in obtaining a productivity estimate at the site that matches the accuracy of data for harvested ani-

mals. Because of such difficulties, J. Robinson and K. Redford developed a model (the R&R model) to fill the void (Silvius 1998). They "abstracted all reliable values on density and reproductive parameters from the literature for the principal Neotropical game species, calculating a maximum average potential production for each species and estimating the proportion of production that could be taken to maintain sustainability." Using the R&R model for a baseline to compare data the community gathered, Leeuwenberg concluded that marsh and pampas deer, tapirs, and anteaters were being overhunted.

In part because of internal community factionalism, WWF received no proposal for the 1994–1995 period. Instead the community requested time to think about the project. Funding was suspended and WWF conducted an interim evaluation. This evaluation kept the project on the table and provided a way to get it restarted in the event that the community expressed interest, which it did. Funding resumed the next year.

Based on the interim evaluation, conducted by wildlife biologist José Fragoso, the original proposal was revised to test for the existence and sustainability of a source–sink system of game supply. In a reserve the size of Pimentel Barbosa in which large areas were unhunted, game populations might be depleted around the home village but be periodically renewed by animals moving in from undisturbed areas of higher population and production. If this scenario is operating, population density should increase with distance from the village, and sex- and age-distribution ratios should stabilize. If population densities and ratios for a particular species are higher near the village, then one can presume that the species is undesirable to hunters or that gardens or some other feature of the local habitat (such as removal of a predator) have enhanced its fitness. If populations are low or sex and age ratios are skewed everywhere, one can presume that the species is being overhunted.

A second research phase was proposed, which would culminate in the drafting of a wildlife management plan. Leeuwenberg's data and input from the community would be analyzed more rigorously to see whether the expected skewing of age structure and sex ratio occurred as hunting moved away from the village. Additionally, a more sustained effort would be made to assess relative population densities. Equal numbers of transects would be set at three distances from the community and sampled for game tracks to measure seasonal variation. Although there might be gaps in any one set of data, comparing sex and age ratios and densities to look for convergent trends would offer a more accurate picture of what was actually going on. A second research biologist, Manrique Prada, was hired under Fragoso's supervision to manage field tracking.

The incorporation of new personnel and perspectives made it essential for the community to feel that continuity was maintained and that local control of the project had not been lost to the scientists and NGO. Leeuwenberg's ongoing participation and his skill as a facilitator would prove to be particularly valuable. Early on, he had established the precedent of reporting regularly to the *warã*, or men's council, and was especially adept in translating Western scientific knowledge into language that the Xavante could understand. Xavante men became engaged in an ongoing dialogue over hunting and resource management, which would over time lead to the revitalization of conservation practices that were in danger of being forgotten.

This task, however, was about to become even more complicated. The interruption of WWF funding during 1994–1995 coincided with growing turmoil in the community concerning Cipassé's leadership, so the Xavantes were distracted from the project. This leadership crisis made it difficult for WWF to negotiate with AXPB about how to proceed. WWF recognized that Cipassé no longer had full community support, yet was bound to negotiate with him because he was still president of the association. Community members, who wanted the project to continue, faced a dilemma as well. They either had to remove Cipassé from office or form a new association. WWF had made considerable investment in the husband-and-wife team of Cipassé and Severia as community leaders and project mediators. It had, for example, funded their participation in training seminars in project planning and management. Yet at this point the WWF representative recognized that other com-

munity members would need to acquire administrative skills if the project was to move forward.

Project scientists and consultants were also caught in the crossfire of factional pressures. The recently arrived Prada was in a precarious position because Cipassé had hired him and controlled the issuing of his paychecks. Leeuwenberg's situation was somewhat better since CPI had hired him with WWF funding. He had also spent enough time working alongside the Xavante to develop strong relationships with a broad cross-section of the community. Nonetheless conflicts with AXPB and its leadership would cause him to leave the project for a time, between January and August of 1997.

In navigating this turmoil, the team of biologists confronted the fact that scientific method and practice could not be ends in themselves but had to be adapted to the social context in which they were being applied. Some methodological rigor had to be sacrificed to ensure the Xavante's participation in the study so they could take ownership of it. The community wanted to know why particular methods were being used so they could evaluate the validity of the findings. During the second phase of data collection, communication about the science was sometimes unclear and community support more lukewarm, which only intensified the dispute around Cipassé's stewardship.

When the community split in 1996 and Cipassé's family left to establish a new village, the project's future was clouded. It had been envisioned and funded as a collaborative endeavor between WWF and Etéñiritipa. Now WWF found itself in the awkward situation of having to deal with the leader of the community organization authorized to handle funds who was no longer part of the community. Cipassé had so tightly controlled AXPB that other leaders had little or no familiarity with the legal requirements and even the routine administrative affairs of the organization. Only Cipassé knew, for example, with which legal office the association and its officers had been formally registered.

At this point, WWF asked an anthropologist who had worked in the community since 1981 to conduct an ethnographic evaluation of the situation and assess the Xavante's perspectives on the project to see if it could be revived and set on course. The 1996 evaluation clarified the need for AXPB's reorganization and suggested ways to involve the community in the development of a management plan. The evaluation process also brought outsiders with different project roles into contact and created a dialogue across areas of expertise. This helped improve communication among all participants and furthered community understanding. Better coordination earlier might have avoided or diffused some of the difficulties the project had encountered. The WWF project director left the Brazil program in January 1996 but continued to monitor the project until his replacement took over in the fall.

As Phase II data collection neared completion, it became clear that reorganization of AXPB would be essential to drafting and implementing an effective wildlife management plan. Assisting community members to meet the legal obligations involved became a major priority. New leaders, such as Suptó, Paulo, and Jé Paulo, needed training in how to meet the legal requirements for holding a valid election, and in the administrative and financial skills to manage the association and the project.

In March 1997 new elections were held. Organizational control passed into the hands of leaders from Etéñiritipa, and Jé Paulo was elected president. Although Cipassé no longer retained an influential position, he agreed to collaborate in the WWF project, with the understanding that his community would share in its benefits.

In July 1997 WWF proposed that the team of biologists led by Fragoso would draft a management proposal. While this proposal would be based on scientific data and analysis, the team agreed that fundamental ideas for the plan must originate from within the community if they were to be implemented effectively.

Following an August 1997 meeting between the biologists and community members in Etéñiritipa, Leeuwenberg held follow-up sessions to clarify the scientific data and research conclusions with the Xavante. The data indicated that the anteater, armadillo, and marsh and pampas deer were at risk, while the tapir was "vulnerable." Tracking data suggested possible source areas for some of the species. Because the natural history was unclear or the supply source was outside the reserve for the anteater and the armadillo, it was recommended that they not be hunted until more

was known or the populations grew. A ban was also proposed for pampas deer because their numbers seemed unusually low. Marsh deer, tapir, and white-lipped peccaries could be hunted in distant source areas only, allowing their numbers to recover in depleted areas. This would shift the source–sink system from one based on distance from the village to a rotational system that utilized the whole reserve. Finally, collared peccary, brocket deer, and smaller species could be hunted everywhere because they were in abundance. The draft plan also recommended constant monitoring in open and banned areas to control for natural declines in populations and to shift hunting when tracking data indicated numbers were in marked decline. There would be no need to determine and set sustainable harvest levels because hunting would shift before populations were depleted.

The Xavante discussed these proposals for several months and began to think, in their own ways, about how to diminish hunting's impact on game populations and how to recover the threatened populations. In November, the hunters offered their plan. Rather than general hunting bans for any species, they proposed that specific areas be designated as temporary wildlife refuges, perhaps because this model fit in with the traditional system of rotation inherent in trekking. They also proposed to intensify fishing during the dry season, and underlined the need to monitor reserve borders against intruders.

At a two-day meeting held in Brasília in December 1997, representatives from Tangure and Caçula met with the leaders from Pe'adzarupré and Etéñiritipa. All four communities agreed to participate in the management plan and to designate three refuges totaling more than 100,000 hectares. They also agreed to intensify dry-season fishing, reinstate traditional burning patterns at the end of dry seasons to limit collateral damage, and collaborate on border monitoring.

Intervillage rivalries resurfaced, however, when the time for formal ratification came. The three research scientists—Fragoso, Leeuwenberg, and Prada—traveled to the reserve in May 1998 with the new WWF representative to present a written plan and an agreement to be signed by representatives of the four communities. Representatives from Caçula and Pe'adzarupré did not attend, perhaps to register their objections to the meeting's location in Etéñiritipa (Leeuwenberg, personal communication). After holding a meeting with the leaders from Etéñiritipa and Tangure, the three scientists traveled to Caçula and met its leaders. In June, a leader from Caçula contacted WWF and proposed that representatives of his community would travel to Brasília to sign the agreement.

The project is likely to continue being buffeted by intervillage rivalries and the politics of power and influence within the reserve, although the issues in dispute may change as plan implementation evolves. Given Xavante factionalism such a situation is not surprising; indeed, the challenge of forging a consensus among all of the reserve's communities has been present from the beginning (Graham 1992). Factionalism makes implementation difficult but it does not preclude the majority of the reserve's residents from participating in moving things forward. As in past endeavors, collaboration is likely insofar as members of the different communities perceive the plan to be in their interests.

V. Conclusions

WWF's involvement with Etéñiritipa coincided with two turning points in the community's history. First was the termination of FUNAI's rice project and the withdrawal of most of the agency's ancillary support. Taking advantage of changes in national law affecting indigenous peoples, the Xavante turned to new sources of outside support such as NGOs. WWF was among the first private entities to collaborate with the Xavante.

The second event was the Xavante's mounting concern about the dwindling supply of game in the Pimentel Barbosa Reserve. Alternative ways to provide dietary protein had either been unsuccessful (cattle ranching) or were rejected (raising animals in captivity). The Xavante wished to discover ways to manage game supplies within the reserve so that they could maintain the hunting practices fundamental to their identity. Their contacts with indigenous activists at the national level, via Cipassé, enabled them to explore ways to do this by collaborating with new entities such as WWF.

The wildlife management project had two advantages over other collaborations with donors that emerged under the auspices of Project Jaburu.

First, the idea resonated powerfully within the community and was rooted in community experience and expertise. And second, there was no rush to implement a plan by importing an elaborate theoretical framework or building physical infrastructure that no one knew how to operate. The project began with a period of joint research that over time allowed WWF to better understand its partner as well as what had to be done. The fruit-processing effort rushed to open a factory and never gave funders the opportunity to meet the community firsthand.

Rather than imposing an outside agenda, the wildlife project respected and tried to build on the foundation of the Xavante's knowledge of natural resource management. In doing so, it reinforced the cultural recovery that was under way and stirred thinking about what was at stake. The danger was not simply that wildlife would vanish, but that an important dimension of Xavante identity would perish with it. This was reflected in elders' growing fear that youth were uninformed and uninterested, and that essential knowledge was being lost. Now there are animated discussions about the habits of various animals and how they are to be hunted. This process has also inverted the conventional wisdom that hunting cultures are dysfunctional under environmental stress. In realizing how close they are to the animals they hunt, the Xavante have found a powerful cultural reason to sustain the resource and the motivation to find the means for doing so.

Thus, Xavante involvement in project data collection and decision making has been very productive. The Xavante have begun to understand how their lifestyle changes have affected the territory around them. There is greater recognition of the reserve's unique resources, and protecting them has become a priority.

A number of secondary benefits unrelated to wildlife management or natural resource conservation also have been achieved. The first sustained collaboration between the community and an NGO has helped the Xavante gain important skills that are essential to their ability to manage future dealings with outside entities. These skills, which can be thought of as the social infrastructure for any kind of project success, include such things as how to negotiate with NGO representatives, devise project ideas and write grant proposals, prepare progress reports, keep accounting records, and gain management experience. In founding the association and learning how to make it work, they have been doing nothing less than inventing a new kind of social tool for themselves.

Yet anyone who presumes that there is some magic formula for working with indigenous peoples only needs to look at the problems that surfaced and at times threatened to undermine the collaboration. Many of these were unavoidable since they were deeply embedded in the culture or a result of a long and troubled history with outsiders. The point is not that all collaborations will face these particular obstacles, but that a clear understanding of the cultural matrix in each project is vital to *its* success. A better understanding of the factional nature of Xavante society and of the complexity of forming transparent partnerships might have enabled WWF to anticipate and avoid some of the pitfalls that nearly swallowed the project.

Not all problems, however, are what they seem. Some not only cannot be avoided, they must be welcomed. In this case, factionalism needs to be put into perspective. What would often be a sign of decay or disorganization in other societies is an indicator of cultural intactness among the Xavante. Posturing and politicizing are fundamental to Xavante social life, and individuals enjoy engaging in political disputes and displays. While politicization of nearly every imaginable aspect of the project may seem paralyzing to outsiders, it can also be interpreted as a sign of how deeply the Xavante are engaged, a sign that they are assuming project ownership on their own terms, at their own pace. Comparing the wildlife management experience with the failed fruit-processing component of Project Jaburu makes this more apparent. Fruit processing foundered quietly, without public acrimony, because the community had been excluded from decision making and had decided not to participate. The lack of "noise" in that case was a warning sign that things were not going well. In contrast, the current intercommunity factionalism may be a positive sign that the process of taking project ownership is extending beyond Eténiritipa to other autonomous communities in the reserve.

Because funders and outside actors did not easily grasp the intricacies of Xavante society, they also misread the importance of the cultural mediator at the heart of a cluster of community projects. Too much was invested in a single individual who was presumed to speak for the community. Although he enjoyed wide acceptance at the beginning of the project, this changed over time as he began to use access to outside resources to leverage internal influence. Funders need to understand that their mere presence, and the access to resources that they offer, can alter the playing field of community dynamics even if there is no overt attempt on their part to do so.

One can also argue that some problems that hindered the wildlife management effort might have been ameliorated had representatives of other factions been more actively involved in the management of the Xavante association. (Although WWF made several attempts to include other factions of the village, including the chief, it was never clear to the organization how much they should push on this issue.) This is not just a question about politics and diplomacy. It also involves a question about what kind of information is needed to make a project viable. Western science can provide tools to help the Xavante confirm in detail what they already suspect, that game is growing scarce, but the best scientific solution will not work if the Xavante do not understand it and are unwilling to support it.

A process of hunting culture recovery was already under way, but things might have moved more smoothly in the project if ethnographic monitoring had occurred in tandem with biological data gathering. An anthropologist or outsider with in-depth knowledge of the culture working in rapport with the technical staff from the outset might have realized sooner that the project time frame had to be longer. Such a person could also have helped build a conceptual framework that would minimize disruptions from staff turnover that are inevitable in any long-term project. More importantly, difficult concepts might have been easier to translate into terms that the Xavante could understand. And such an individual might in turn have facilitated scientists' understanding of Xavante concerns. A conscious process might have been engaged that would have helped the Xavante to look sooner at what aspects of their hunting culture and newly sedentary lifestyle were contributing to game depletion and what hidden resources were dormant within the culture as possible solutions.

Fortunately the first research biologist understood the need to work closely with the Xavante in his fieldwork and had the rare interpersonal skills to do so. But the informational net might have been cast more widely since hunting cannot be separated from questions about Xavante lifestyle in general. Women, whose role in community affairs must not be underestimated, had very little understanding of the project. The need for them to do so may not have been obvious since men are the principal hunters, and the biologists were unlikely to think about women's relationship to the project since they relied on the *warã* as the venue for communications. Although the *warã* is the arena for public decision making and discussion, in fact most important matters are discussed and decided upon in meetings that take place outside its sphere (Graham 1993). Had outsiders more actively sought to communicate in these forums, women might have had a greater chance of indirect participation and more opportunities to gain understanding and make their voices heard (see Graham 1992, 1995). Xavante male leaders did not welcome such overtures and actively sought to discourage them. However, closer ethnographic monitoring from the beginning might have helped open doors and provided access to new information and a wider perspective on project means and goals. It might also have helped funders identify the roots of emerging problems and begin a dialogue with one another and with the Xavante to resolve them.

Important decisions lie ahead for the Xavante. Establishing refuges is provisional, pending the results of ongoing monitoring. Since 1991 the Xavante have been encouraged to hunt away from their home village. With hunters driving to distant zones, it is likely that pressure on game has actually increased throughout the reserve. The system of refuges may suffice for a while, although additional species may have to be protected. If source areas are encroached upon, which may occur as Xavante population increases, some species may dwindle dangerously. Fortunately, as their history shows, Xavante are expert at adapting to new situations.

There are indications that they have shifted their hunting preferences from species to species in the past, depending on availability. The practice of informally hunting in gardens can be more systematically exploited in order to reduce pressure on larger game populations.

It is too early to say how the Xavante will fare in the future, but they are determined to pursue their objectives and are prepared to meet challenges head on. They are a fiercely independent people who understand that their autonomy depends on how well they protect their land. Once, that meant guarding against all outsiders. Now it means working with those who work with them to protect their land, its resources, and their identity.

Endnotes

1. The author would like to thank John Butler, Nancy Flowers, Ailton Krenak, Frans Leeuwenberg, Rosa Lemos, and Kirsten Silvius for their thoughtful comments about this case study. Thanks also are extended to the Instituto Socioambiental for answering questions about the legal status of Xavante reserves.

2. This case study uses the form that literate members of the community have adopted in designating this community to outsiders, and in distinguishing it from others within the Pimentel Barbosa Reserve. Variant spellings are recorded as Etéñitepa, Etenhiritipá, and Tenipá.

3. The Kaxinawa of the Rio Jordão in Acre had received several grants that focused on issues important to WWF. These involved the marketing of renewable forest resources, including natural fiber handicrafts and improved rubber processing. The mayor of Rio Blanco, the state capital, donated land and WWF covered building costs for a small shop on the main plaza in which the Kaxinawa could sell crafts and promote their culture.

4. Allocations ran approximately $25,000 to $30,000 per year during phases I and II for research and planning. Budgets for implementation ran higher. For example, WWF–Brazil requested approximately $100,000 for FY 1998 to cover the cost of scientists' salaries, two aluminum boats, motors, and fuel, and to install radio towers so that the reserve's separate communities would be able to communicate. Approximately $70,000 was received, primarily from WWF–Sweden, to cover all expenses except for the radio communication system.

5. The other major Amazonian language families are Arawak, Carib, and Tupi. Other members of the Gê language family include the Kayapó, Krahó, Suyá and Timbira (Northern Gê) and the Kaingang and Xokleng (Southern Gê). Gê languages are closely related and their speakers share many cultural features.

6. The background material presented here summarizes information from several major works on the Xavante. Lopes da Silva (1992) provides an excellent historical overview. Other important sources are Chaim (1983), Flowers (1983), Graham (1995), Maybury-Lewis (1974), and

Ravagnani (1978). Garfield (1996) is important for the period 1937–1988.

7. "Pacification" is the term used by SPI and its successor FUNAI to describe government efforts to establish peaceful relations with indigenous peoples confronted by outside economic and colonial expansion. Under the directorship of General Rondon, the SPI developed a unique strategy for convincing hostile Indians that government agents were different than *bandeirante* slave hunters and settlers who were moving into Brazil's interior. The policy called for teams of unarmed SPI agents to introduce contact by leaving gifts of beads, machetes, mirrors, and clothing in areas frequented by members of a targeted group.

8. Other Xavante groups entered into peaceful relations with outsiders during the late 1940s and the 1950s. Some groups sought refuge from disease and hostilities with Salesian missionaries. Their descendants now reside in the São Marcos (188,478 ha) and Sangradouro (100,280 ha) reserves. Other groups, which had moved much further west, were considerably influenced by Protestant missionaries from the South American Indian Mission and the Summer Institute of Linguistics (Wycliff Bible Translators). These groups now reside in the Parabubure (224,447 ha) and Marechal Rondon (98,500 ha) reserves.

9. The mechanized rice-cultivation project was part of the integrated development plan for the Xavante Nation, a grand strategy that grafted indigenous policy and efforts to improve health and education onto the economic development ideology of the post-1964 military government (Lopes da Silva 1986, 103–105).

10. For further discussion of the Xavante project see Graham (1995, 44–61) and Garfield (1996, 477–548).

11. For an excellent discussion of indigenous rights and legislation prior to the 1988 Constitution, see Carneiro da Cunha (1987).

12. Xavante use the Portuguese term *branco*, or *white*, to refer to non-Indians.

13. For more information on this family's leadership, see Maybury-Lewis (1974).

14. Warodi is the brother of Cipassé's biological father; within the Xavante kinship system he is classified as a father to Cipassé.

15. I attended several of these meetings in Goiânia and Pimentel Barbosa.

16. Scholars have noted similar patterns for bicultural mediators elsewhere in native Amazonia. See Jackson (1991, 1995), Brown (1993), Ramos (1994a, 1994b), and Conklin and Graham (1995).

17. Graham (1995) discusses the tension between individual prominence and collective identity.

18. A new UCG rector would reverse this admissions policy after the students were enrolled for over a year.

19. Quickly learning enough Portuguese to follow university courses was a severe challenge, and adapting to life in Goiânia was hard for many students, especially the Yanomami, Surui, and Tikuna, whose homelands are very different from a cerrado environment.

20. There is some disagreement about the reasons for closing the facility. According to Frans Leeuwenberg, who worked as a consultant for the CPI, operations shut down because the Ford Foundation and the EC withdrew funding. Ailton Krenak maintains that funding was not an issue, and moving research to local communities was the next logical step for the program to take.

21. Leeuwenberg had been associated with the CPI and had already initiated some preliminary studies.

22. Women also hunt small animals, but never as an end in itself. They take opportunities as they arise, for instance when a woman en route to her garden comes across an armadillo.

23. Women give a portion of their meat to the families of their sons' brides-to-be who reciprocate with garden produce and collected food.

24. Flowers cautions that individual hunting may be underestimated since men take guns with them everywhere and serendipitous kills may not be reported as hunting.

25. Flowers cautions that low-prized game not shared between households may have been underreported.

26. This meat is then distributed to the entire community and everyone but the groom's family partakes. The bride's family reciprocates with large ceremonial corn cakes to the groom's family. This exchange models the contributions to the diet that husband and wife will make in their marriage.

27. One such hunt, which bagged a tapir and a deer, took place in 1991 for my wedding. Tsérére was appropriate because time was short (my husband would be in the community for less than two weeks) and because he was not accustomed to the strenuous conditions of Xavante extended-hunting excursions.

28. The hunting range area increased to 85,000 in 1992 and 115,000 in 1993, which created a rotation total of some 200,000 hectares (Silvius 1998). These increases coincide with Leeuwenberg's presence, and the wildlife biologist's efforts to explain the effects of overhunting in finite areas may have led the Xavante to expand their hunting ranges.

29. I know of only one Xavante who cares for his community's herd, in the Parabubure area.

30. This section draws extensively on technical material in "Development of a Wildlife Management Plan for the Rio das Mortes Xavante Reserve," an unpublished 1998 report prepared by Kirsten M. Silvius for WWF.

31. According to Leeuwenberg (personal communication), the Xavante, when there is no embryo, roast and eat this small organ along with the connective tissue at the site of the kill. When there is an embryo, the uterus is cut out and discarded. Leeuwenberg accompanied some hunts, and none of the small number of uteruses he was able to observe had placental scars, which indicate the number of embryos the female was carrying.

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CHAPTER 5

Holding On to the Land: The Long Journey of the Sirionó Indians of Eastern Lowland Bolivia

Wendy R. Townsend[1]

I. Introduction

Centuries after the Spanish Conquest the Sirionó Indians still roamed freely in small nomadic bands over a vast area of eastern lowland Bolivia. The rubber boom sparked by two world wars and then the establishment of large cattle ranches in northeastern Bolivia brought that idyll to an end and brought the Sirionó to the edge of extinction. Many were settled as captive workers on large ranches or in government training schools that were actually forced labor camps (Holmberg 1969).

One tiny door remained ajar, and even this led to a kind of imprisonment. Thomas Anderson, a missionary from the Four Square Gospel Church in California, was among the first outsiders to put down roots in the area. In the early 1930s, he had established a mission at a spot chosen by a Sirionó group, a place they called Ibiato, or High Hill, which lies about 55 kilometers due east of Trinidad, the capital of Beni State. Alan Holmberg, an anthropologist who described his travels with a nomadic band in the 1940s, dismissed this missionary effort as marginal, little suspecting that within two generations it would be the center of what remained of an entire people. The missionary's son, Jack Anderson, became fluent in the Sirionó language and began to wage campaigns of recruitment. He gathered small bands from the forest, brought others from forced labor on ranches, and settled them all in Ibiato. Following the centuries-old Jesuit system of the *reducción*, or reduction (a South American Indian settlement directed by Jesuit missionaries), Anderson put the Sirionó to work for the mission three days a week (CIDDEBENI 1996).

For the Sirionó, gaining possession of even this small foothold has been precarious. It has been a struggle not only to claim the land but to determine how it will be used. Thomas Anderson

seemed to settle the first question by applying soon after his arrival for territory from the Ministry of Colonization and the Beni State governor's office, or *prefectura*. In 1933 the Bolivian government's *resolución supremo* conferred "right of possession" to the mission, and the claim was measured and titled a year later.

But the 1953 Agrarian Land Reform Law reopened what had seemed settled, requiring all landowners to reestablish tenure. Living so far from the eye of the state, in an area where few outsiders bothered to visit, the mission overlooked this "formality" until 1982, when the Sirionó pressured Jack Anderson to reregister. Even with help from two membership organizations working on land rights issues in the state—CIDOB (the Confederation of Indigenous Peoples of Bolivia) and APCOB (Aid for the Rural Peoples of Eastern Bolivia)—the application was rejected because of "poor topographic mapping." Meanwhile mission administrators appointed by the aging Jack Anderson to act in his stead were whittling the territory away through piecemeal sales, and the government was issuing duplicate titles for other parcels to influential cattle ranchers. Land reform was a cruel joke for the surviving Sirionó: it created a noose of cattle ranches that was steadily being pulled tighter. That pressure intensified in 1987 when a new road from Trinidad to Santa Cruz, the capital of the neighboring state, opened up Sirionó territory to vehicles where once only oxcarts could pass. The Sirionó seemed in danger of losing everything.

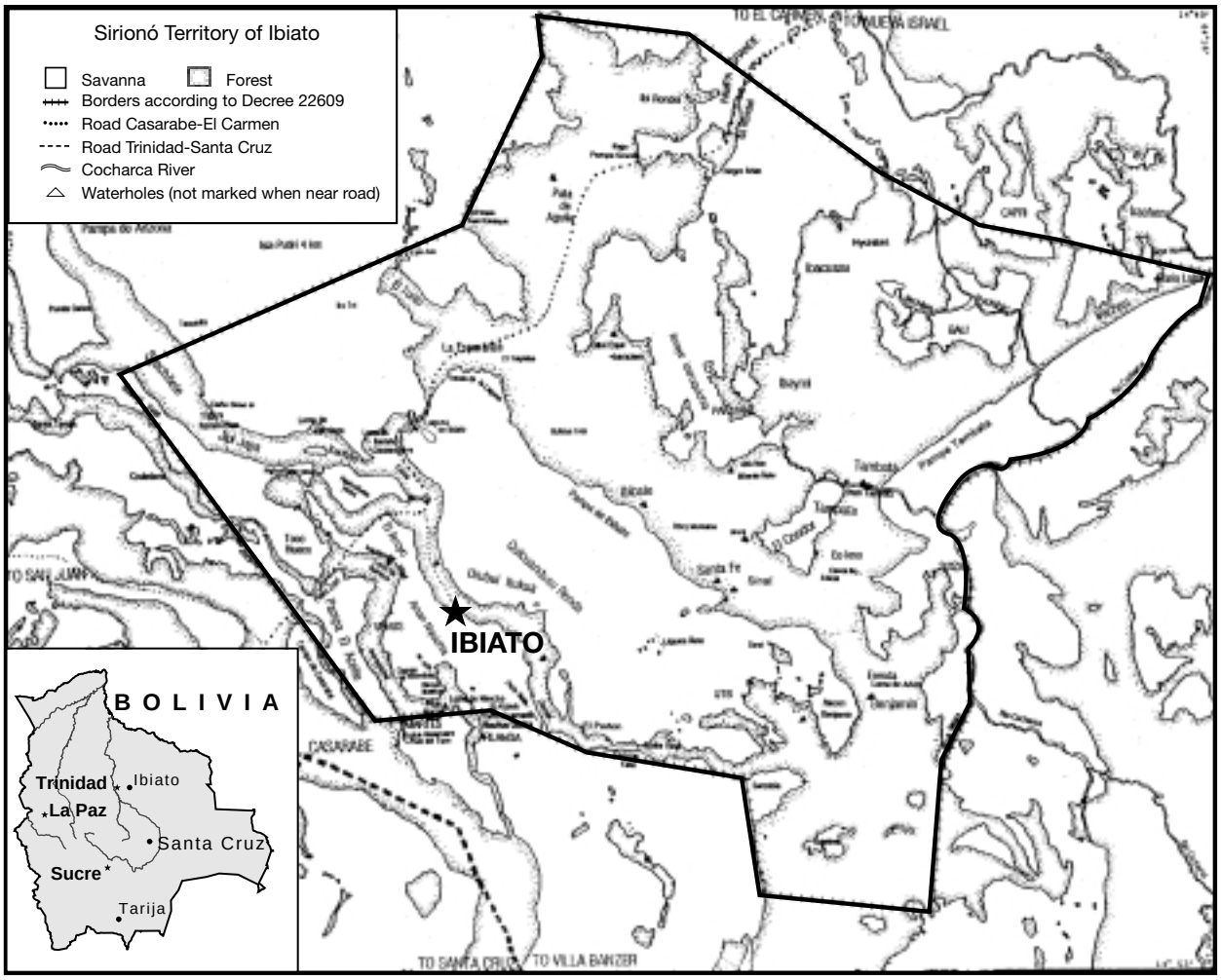
Fortunately the budding indigenous rights movement in the Beni was bringing together many groups with similar stories. In 1990, 38 Sirionó joined with members of other groups in the area for a march to the national capital, La Paz, to demand their territory and affirmation of their human dignity. The route was backbreaking—a trek of over 400 kilometers that wound its way up Andean passes more than 4,000 meters higher than the spot from which the marchers set out. Aided by national and international press coverage (including CNN), the march captured the popular imagination. By the time the marchers reached La Paz, Bolivian President Jaime Paz Zamora was ready to sign several executive orders designating indigenous territories. With the first of these, registered number 22609, the government recognized the Sirionó Territory as "the area they traditionally occupy … delimited by 36 natural landmarks well-known by the people of Ibiato." In 1994 this area was demarcated between 64º16" by 64º34" W and 14º40" by 14º53" S (see map 5.1). Not all the traditional landmarks were respected, and claims to some 30,000 hectares in the neighboring San Pablo Forest were left unspecified.

Besides the problem of what was omitted, the Sirionó faced the challenge of taking control of what was included. Consolidation of the territory proved difficult and is still incomplete. The first to cede land was the State University, which had title to the central savanna. Not surprisingly, private landowners were less willing, and they stalled to consolidate paperwork to buttress their own claims. Some disputed areas were purchased for the Sirionó through the generous donations of TUFF (the Swedish Peace and Arbitration Society). People who had taken properties along the road, however, often refused to cede their claims and the land value rose beyond TUFF's means to buy it back. The woodland claims were even more tangled. In Bolivia, tenure does not guarantee land-use rights. The state retains ownership of most natural resources and assigns usufruct at its discretion. Most of the San Pablo Forest had already been assigned to private concessions, although some parcels would eventually be returned to state control by concessionaires unwilling to pay taxes from a new forestry law passed by Paz Zamora's successor as part of a series of sweeping governmental reforms.

That tide of reform held great hope for Bolivia's indigenous peoples. The new Agrarian Reform Law (INRA) allowed groups like the Sirionó to hold territory in common in newly established indigenous homelands known as Tierras Comunitarias de Origen. The new Law of Popular Participation promised to strengthen local government and allowed the people of Ibiato to create a municipal district eligible for development, education, and health funding from the state.

However, the ruling party that passed this legislation lost power in the 1997 elections before all of the administrative procedures for implementing the laws could be finalized. Doubts about the new government's intentions to enforce the spirit

Map 5.1 Borders of the Sirionó Territory of Ibiato According to Decree 22609



Source: Townsend 1996. Insert map: Cartesia Software.

of the law quickly surfaced when ambiguities in the legislation were interpreted narrowly. Some of the rules changed in midstream, imposing burdens that low-income communities would have difficulty meeting and putting them at a disadvantage with large landowners or businesses competing for the same resources.

Even as the Sirionó wrestle with the question of usufruct, a new threat of outside colonization is looming. The new government is distracted by problems with coca growers in the Chapare region at the foot of the Andes, and has suggested moving some of them to the Beni. Such an invasion would chill consolidation of territorial demands by all the indigenous peoples of the state, but the Sirionó are particularly vulnerable because the dirt access road that connects Ibiato to the Trinidad–Santa Cruz highway is an arrow through the heart of their territory.

So the victory the Sirionó won with the march can still be reversed. The more than 500 Sirionó who live on High Hill face a dual challenge as they look to the future. First, they must develop a resource management plan to consolidate tenure and protect their land from outsiders. Second, as their population rises and the impact of market society intensifies, the Sirionó must look inward to organize their own resourcefulness if the resource base is to be sustained.

The external and internal challenges are intertwined but have different timelines. A management plan is needed quickly, but building social institutions to reach consensus and make it stick takes much longer. This task is complicated by

more than half a century of dependence on "benevolent" outsiders and by the influx of NGOs that have descended on High Hill since the presidential decree. Many have come with their own agendas, offering services that sound good but do not necessarily meet the needs of the Sirionó or prepare them to run their own projects once the short-term funding runs out. This case study looks at a long-term effort that is under way to help the Sirionó develop an integrated forest management plan to hold on to their land and use its resources wisely. This effort is still in its early phases, and some of its components, including wildlife management, are focused on research to help the community recover its knowledge of the environment and adapt scientific concepts, when appropriate, to meet local needs.

The story of this effort to put the Sirionó in charge of their own destiny is broken into three parts. The first gives a brief overview of local ecosystems, social organization, and resource-use patterns, and the implications of new tenure and usufruct legislation. The second looks more closely at the forest management initiative and its wildlife component. Finally, lessons are offered that may be of use to others. The Sirionó are a small group, their territory is modest, and it sits on the far fringes of the more biodiverse parts of Bolivia's Amazon Basin. But the Sirionó are fortunate to have what so many other groups in those areas lack—a presidential decree that allows them to begin turning the dream of a homeland into a lasting reality. They are part of a much larger indigenous movement, and what is learned in Ibiato can be applied elsewhere and become a precedent for persuading a reluctant government to give others the same opportunity. Lessons are also being learned about how conservation NGOs can build a sustained dialogue with indigenous peoples to build partnerships in which economic viability and environmental stewardship go hand in hand.

II. An Overview

2.1 Ecosystems of the Sirionó Territory

Sirionó ancestors chose their foraging grounds wisely. As nomads who roamed a wide belt east of the Andes, they knew that the transition zone between the forested Chiquitano highlands and the savannas of the Beni Basin was rich in the motacú palm (*Attalea phalerata*), which was their principal carbohydrate source (Holmberg 1969). The area is abundant with game, as wildlife also feed on the palm, which produces fruit year-round. The density of these palms is not accidental, but is a sign of intensive pre-Columbian activity by indigenous peoples (Balée 1987, 1988, 1989), who nurtured the plant as a wild crop. Confirmation of that presence can be seen in the many human-made hills and canals carved across the region (Denevan 1966; Townsend 1995, 1996). The village of Ibiato is built on one of these hills, rising about 80 meters above the surrounding floodplain. Visible reminders of past human habitation are evident in the pottery shards littering more than 20 other hills elsewhere in the territory. The Sirionó do not remember the people who once inhabited this zone and are probably not descended from them, since the Sirionó language is linked to those of the great Tupi–Guarani migrations entering the area prior to the arrival of the Spaniards (Holmberg 1969).

Although they have roamed the zone for much longer, the Sirionó have been rooted to the patch around Ibiato for little more than half a century, some three generations. Nonetheless they know it intimately, as their names for the mission's 36 landmarks indicate. Some of the names refer to relatively recent events: Ama Nguichia is where "the woman was struck by lightning." Other names come from the particular resource endemic to the spot: Tambatá savanna bears the moniker of the walking catfish (*Hoplosternum thoracatum*) that is common there. The accumulated knowledge crystallized in the language includes an ability to describe the great diversity of habitats found in this region. The area of the San Pablo Forest that has yet to be demarcated is less well known by living Sirionó.

The landscape delineated by the presidential decree is primarily of two types. Some 46 percent is flooding forest, and 48 percent is flooding grassland or swamp. The remaining patches consist of artificial hills, gallery forests, and related agricultural land. Even though soils may be variable, over 70 percent of the territory floods for two to six months a year. Some forested areas only flood in peak rainfall years, and the water may drain in only days or weeks, making agriculture possible most of the time.

But a satellite photograph that divides the landscape into savanna and forest does not begin to capture the diversity seen on ground level by an experienced eye. The Sirionó recognize many forest types by their soils and the presence of indicator species (CIDDEBENI 1996). The three most extensive forest categories recognized by the Sirionó are tagged by prominent species in their undergrowths. The first, Ibera, refers to a high density of lianas. The second, Quiarochu, is named after a prolific *Heliconia*. Finally, Ibiete is abundant with a rapidly growing ginger plant. Palms, such as the motacú and the chonta (*Astrocaryum chonta*), are abundant and often make up more than half the trees in all three forest types (Townsend 1996).

Although the land is flooded part of the year, cold southerly winds during the dry season leave behind only water holes, which become a crucial limiting factor for game populations. The swamps of the deepest savanna, locally called *yomomos*, contain considerable water even in dry years because each is capped by a floating peat mass capable of supporting Tajibo trees (*Tabebuia*) five meters tall. Yomomos provide refuge for many aquatic animals, including two species of caiman (*Caiman yacare, C. nigricollis*), three kinds of stork (*Jabiru mycteria, Ciconia manguari, Mycteria americana*), capybara (*Hydrochaeris hydrochaeris*), and marsh deer (*Blastocerus dichotomus*). Other important water holes lie beside many of the pre-Columbian mounds.

Before wells were dug in Ibiato, the Sirionó often had to walk a kilometer or more to dig for water in the savanna. Many people still do so during the dry season because they find well water too "salty." A recent development project in Ibiato has perforated a new well and built a water tank, and though the water's taste has not improved, it is available on most days at various spigots near the houses. The children who were the principal water carriers from the savanna now have more free time. This benefit is offset by other costs: it takes fuel to keep the tank pumped full and, more ominously, runoff from the new water system threatens to erode the Ibiato hillside, which was constructed by generations of pre-Columbian labor.

When the rains return sometime between October and December, the creeks overflow. Millions of walking catfish emerge from aestivation and swarm onto the flooding savanna. Overnight what was parched landscape becomes a super-rich breeding ground for fish, reptiles, amphibians, and insects, drawing a multitude of migratory birds and mammals to feast on the abundance. The savannas submerge as the rainy season progresses, significantly hampering transportation. It requires a strong ox to cross from Ibiato to the forest, and most people must walk circuitously around the swamp to reach their garden plots. During this period Ibiato turns from a village on a hill into an island.

The floodwaters drain northeast into the Cocharca River and from there into the Itenez and Madeira rivers of the Amazon Basin. The northeasterly drainage is aided by dry southerly winds that follow the winter cold fronts from June to August. These fronts, locally known as *surazos*, can drop temperatures from 36º C to 7º C in a few hours. After a few days these winds usually shift, and temperatures return to average, about 25º C.

2.2 Sirionó Social Organization

According to Holmberg (1969), the fundamental social and economic unit of the nomadic Sirionó was the matrilineal nuclear family (married man, spouse or spouses, and their children). The Sirionó wandered in bands, usually consisting of several matrilineal extended families (with matrilocal residency), which were loosely associated around strong leaders. The chieftain (a patrilineal position) knew where the game and other food resources could be found, but his band had no prescribed territory. Resources were held in common but belonged to whoever used them. When one band came across another, the meetings were peaceful and without prescribed ceremonies.

The Four Square Gospel Mission joined various bands together at Ibiato, each with its own leader or cacique, some of whom had considerable fame in the Sirionó world. Several caciques were given equal roles to play in managing the community, and in this way a council was created. For decades these leaders solved internal problems and represented the Sirionó with the mission while the Andersons managed the community's relations with the outside world. During the 1970s, direct management of the mission and its cattle herd was delegated to a series of hired outside administrators.

With the improvement of the road from Trinidad to Santa Cruz in 1987, Ibiato became more accessible and, despite Jack Anderson's efforts, direct contact with the outside world became inevitable. Leadership in the community began to change as outside contact increased and literacy became more important. The average age of leaders dropped by 10 years. This new group of cultural brokers was more worldly-wise but less knowledgeable about traditions and the local environment. The older chieftains were relegated to an advisory Council of Elders, while the younger generation took over the Sirionó Council and revamped it with a more formalized, functional structure.

Today the community is governed by this council, which consists of a president, vice president, secretary of minutes, secretary of communication, secretary of land affairs, secretary of organization, corregidor, sub-alcalde (vice mayor), and the Council of Elders. Only the president and the secretary of land affairs are empowered to speak formally for the Sirionó. But the corregidor and the vice mayor have roles to play as representatives who report to the federal and state governments, and the municipal government, respectively. Now that the Sirionó territory is its own municipal district (#12) eligible for funding under the new Law of Popular Participation, the Sirionó have created an independent watchdog committee to monitor proper use of the funds.

The Sirionó are also represented in the network of Bolivian indigenous organizations, starting with the statewide CPIB (Center for Indigenous People of the Beni) and CMIB (Center for Indigenous Women of the Beni). These in turn are affiliated with the national umbrella organization CIDOB (Confederation of Indigenous Peoples of Bolivia), which in turn is represented in the multinational COICA (Confederation of Indigenous Organizations of the Amazon Basin). Through these organizations (or directly if needed), the Sirionó can receive counsel from lawyers hired by CEJIS (the Research Center for Social Justice). As a result of these contacts, the Sirionó have learned to make their collective voice heard, especially when political action is required. For example, when the government seemed to drag its feet on including indigenous territories in the new agrarian reforms of INRA in 1996, the Sirionó participated in a CIDOB-organized protest march from Santa Cruz to La Paz.

Bolivia's indigenous people have begun to assert themselves in the electoral arena also. During the last elections indigenous candidates won local offices and even Senate seats in La Paz under various party banners. At the national executive level, however, the results were discouraging for the indigenous rights movement. The prominent leader Marcial Fabricano, a Mojeño from Trinidad, ran for vice president on the ticket of MBL, the country's fifth-largest political party. Unfortunately the slate lost quite badly, even in Ibiato, which did not turn out to support an indigenous leader. The roots of political patronage run deep, and the Sirionó traditionally have had closer ties through one of Jack Anderson's sons to another party, the MNR, which had won the previous election.

A key player in helping negotiate terms with the outside world has been the mission school, which has played a dual role in Sirionó life. On one hand it has probably helped erode the accumulated knowledge of the traditional culture. On the other it has conferred the powerful tool of basic literacy. Fortunately this missionary enterprise was bilingual and avoided the pitfalls of replacing a native oral tongue with the Spanish of mainstream society. In the 1960s, missionaries Perry and Anne Priest of the Summer Institute of Linguistics (SIL) began giving Sirionó a written form by translating the Bible. They educated a few youths at the SIL compound in Tumichuqua before moving their translation work to Ibiato, living in the village for months at a time. The Priests supported education in both Spanish and Sirionó, and paid teachers' salaries. Later they arranged for the teachers to be given government positions. Today the school has five grades. Like Bolivian rural education in general, the quality is not high but nearly 95 percent of Ibiato's children attend school.[2] The young people that these missionaries trained are today's Sirionó leaders and educators. Without these missionaries' early efforts to educate the Sirionó in the national language while preserving the Sirionó language, the community would not be learning to handle its own affairs today.

The missionaries also brought Western medical care and a dependence on commercial pharmaceuticals. Anne Priest ran a daily clinic to treat the Sirionó, who faced serious epidemics of measles, mumps, and assorted influenzas.

Lung problems are still very common. Young children not given antibiotics still die of pneumonia, and tuberculosis is endemic. More recently, nurses from Caritas have supplied prenatal health care along with pediatric care and nutrition programs. There is also a state-paid community health worker who has been trained to treat the most common illnesses such as diarrhea, bacterial infections, and colds. Major problems are referred to a hospital in Trinidad. Recent paving of the road to within 14 kilometers of Ibiato makes that easier, and the community radio can be used to summon an emergency vehicle even in the rainy season when the dirt road turns to mud. Child mortality has dropped dramatically. Women now in their 60s lost most or all of their children to various epidemics that once swept like a scythe through the population; now there are younger mothers who have 10 to 13 living children. The 1993 estimated population growth rate predicted a doubling time of 11.1 years, which means that there will be over 1,000 Sirionó in the Tierras Comunitarias de Origen (TCOs) by 2004 if recent trends continue.

Nearness to the state capital has affected community life in another way. Bolivia has seen an explosion of NGOs in recent years. As a remnant indigenous group within a taxi drive of the regional airport, the Sirionó have become "poster children" for service NGOs staffed by urban professionals who seldom stray far from a paved road and have little interest in long-term community development. The Sirionó are anxiously looking for solutions to their everyday living requirements, and for anything that promises to help them consolidate their territory. Many NGO project ideas sound enticing because they promise to be "cost free." Yet too often they pull the Sirionó in different directions, since NGOs increasingly offer specialized services keyed to their own internal agendas rather than to an overall assessment of the needs and aspirations of the community. Because many of these proposals are conceived as short-term transferable packages of infrastructure or technology, the need for involving local people in planning, design, implementation, and evaluation is ignored. The end result is predictable. Either the technology does not work as advertised or it has unintended consequences.

Several projects, for instance, have focused on cattle production. The Sirionó are attracted because it seems like an uncomplicated way to reinforce their claim to the land by showing it is being used, and perhaps because some of them have worked on ranches elsewhere in the state. Yet similar projects throughout the Amazon region have usually had unhappy results. If the cattle are held privately, incomes can become skewed and community polarization increases, particularly if the grazing areas are communally held and not everyone shares in the benefits. Perhaps more importantly in the case of the Sirionó is the question of what environmental impact more intensive cattle herding would have on native plants and animals that people are already concerned may be diminishing.

2.3 A Subsistence Economy in Transition

Holmberg (1969) described the Sirionó as being first and foremost hunters, with little or no horticulture. Their agriculture in the 1940s was little more than planting maize in natural tree-falls. Even in the farming colony that Holmberg helped found, Tibaera, the quest for meat kept people moving, often to the detriment of their crops. At Tibaera, Holmberg recorded a daily per-person meat consumption during August, September, and October 1941 of 238, 225, and 153 grams, respectively. While trekking, he reported daily intakes of up to 1 kilogram of meat per person. Fishing by bow and arrow occurred but was considered unimportant.

The primary supplement to hunting was the gathering of forest foods, particularly palm hearts and various fruits. The entire family took part, with children learning what plants were edible by helping to collect them. The quest for wild honey was constant, and the Sirionó were adept at spotting the small holes native bees bored in dead trees for hives.

Today the Sirionó lifestyle has been reversed. They live mostly from the bounty of their gardens, with primary crops of upland rice, maize, sweet manioc, bananas, yams, sugar cane, avocados, citrus, pineapple, and mangos. Excess produce is fed to pigs, chickens, and a few ducks that roam freely throughout the village. Supplementary staples such as sugar, cooking oil or lard, and wheat flour can be purchased from household shops that stock items when they can. Traveling salesmen who once came intermittently on horseback now arrive regularly by vehicle,

bartering goods for chickens or for honey when it is available. Domesticated animals are rarely eaten but are held in reserve as a source of emergency cash. Some community members own a horse or two and a few cattle, or keep saddle oxen to get around during the rainy season.

Finding outside work to earn cash is not difficult. Most surrounding ranches hire Sirionó men as cowhands or as day labor for building fences or clearing land. A cowhand takes his family to the ranch that employs him, leaving behind children still in grade school to board with other families. About one-third of outside work is on cattle ranches, while agriculture and construction split another third (CIDDEBENI 1996). The remaining third comes from work in sawmills, palm heart factories, and assorted other activities. There is also the beginning of an internal labor market from the influx of NGO projects and the creation of a municipal district. At times the heavy demand for certain skilled people requires the Sirionó to hire others to help tend their garden plots.

Yet despite these activities the Sirionó still consider themselves to be hunters, and leadership is still linked to hunting prowess. The hunting has changed considerably, however. No longer do the Sirionó employ the world's longest bows and arrows as described by Holmberg. Now more than half the game is killed by firearms, and three-quarters is taken using weapons unavailable before Columbus. Although fishing is still secondary, it is a regular source of protein for some families. Boys spend afternoons using hook and line to bring in 5 to 10 kilograms of as many as 50 small fish. This may soon be a memory, however, because the road dike constructed across the nearby lake blocked flows and is building up sediment. What was once open water is becoming a peat bog.

During 1991–1992, hunting supplied over two-thirds of the animal protein in the Sirionó diet (Townsend 1995, 1996). Wildlife comes from both savanna and forest. If one considers all the fish as savanna products, approximately 100 kilograms per square kilometer per year are extracted from this habitat. In addition to fish, the considerable harvest of savanna biomass includes marsh deer, nine-banded armadillo (*Dasypus novemcinctus*), gray brocket deer (*Mazama gouazoubira*), and various marsh birds. In a year, the Sirionó extract 134 kilograms per square kilometer of game from the forest, including tapir, two species of peccary, red and gray brocket deer, coatimundi, and two large rodents, the paca and the agouti. Hunting is practiced year-round and harvest composition varies seasonally. Over 90 percent of game biomass taken in 1991–1992 was mammalian, and 75 percent of that came from ungulates. If the extracted biomass is averaged across the population of Ibiato, it averages about 55 grams of protein per capita daily. This corresponds to the average daily intake of wild animal protein by other Latin American indigenous groups, which has been estimated at 59 grams per capita (Townsend 1995, 1996). It is also nearly three times the recommended adult minimum daily allowance of 20 grams of protein (FAO/WHO 1973).

Game harvests have fallen in recent years, perhaps because the number of domesticated animals, overseas food-aid efforts, and jobs from the influx of NGO projects have risen. But it is the decline in game supply reported by Sirionó hunters that has sparked interest in producing a wildlife management plan. That interest dovetails with the desire to earn income, since the Sirionó also sell skins and hides when there is a buyer. One game hunt has been monitored (Stearman and Redford 1992), and the harvest was judged to be sustainable.

The Sirionó also harvest various wild honeys produced by the native meliponid bees. They have an elaborate identification system for 15 different bee types based on the taste of their honeys (Montaño 1996). Although most are too acidic for sweetening, each honey has a medicinal use. The Sirionó barter the honey in Ibiato but prefer to sell it in Trinidad, where the women offer it door to door for higher prices. The revenues are used to buy household utensils, school supplies, oil, sugar, flour, and other necessities.

There is also some interest in marketing crafts. Some of the women fashion simple necklaces of seeds, feathers, and porcupine quills to sell in Trinidad and also to the numerous visitors to Ibiato. Traditionally women have made string hammocks from *Cecropia* fibers, but the women's club has learned how to weave hammocks and some members are now producing them. Sirionó baskets—usually rudimentary and unfinished—are not an inspiring tourist item.

The clay tobacco pipes made by the older folk crack easily because of their poor firing and are equally hard to sell. A recent project has set up an artisan center where men and women can learn woodcarving, ceramics, basketry, and weaving, but the teacher was hired for only a short period. The sponsoring NGO overlooked local master artisans for the position, and presumed they should offer their skills for free. The outsider who was hired offers only outside techniques, and there is no effort to recover or refine designs based on local tradition.

2.4 Tenure and Resource Rights

The Sirionó are interested in using their resources to raise income and to ward off outside claims by showing that the land is already being used. The recently enacted agrarian reform law setting up legally established indigenous homelands, or TCOs, would help consolidate what was granted through the presidential decree. Legislators who drafted the law, however, may have underestimated the difficulty in equitably administering it. A community must show that it is culturally intact and has the ability and intent to manage the ecology of the land in its possession. In practice, this means showing proof of ownership and obtaining registered land-use concessions from the agencies in charge. Even when a community has title, it is often described in terms of metes and bounds without meaningful reference points.

The Sirionó thought they had resolved all doubts by surveying their land with navigation-quality global positioning instruments (GPS), which met the government standards in place at the time. The Agrarian Reform Institute set up to implement the law, however, now says it requires the extraordinarily expensive geodesic GPS survey, whose accuracy far supercedes that of most titles already on file. The midstream switch in requirements has raised concerns among the Sirionó that the government does not want to issue final deeds and is stalling until large landowners can consolidate rival claims. Even if that suspicion proves unfounded, to comply with the requirements for a definitive study of even one territory is daunting, and the flood of applicants for TCOs, many of which have more tangled claims than the Sirionó, ensures long processing delays.

Another problem concerns registration of usufruct with the appropriate government agency. The presidential territorial decree exempts the Sirionó from justifying why they need as much land as they have asked for, but the new forestry law applies in full force to preexisting as well as new activities on their territory. It says that before they can commercially harvest their forest products—including wood, honey, game, or wild fruits—the Sirionó must have a written management plan, produced by a professional forester. Other strictures apply as well. As the next section will explore more fully, this creates a sense of urgency not only because it affects long-standing sources of income but because forest resources have value to other interests in the area who may be able to prepare their own management proposals more quickly.

Fortunately for the Sirionó, there has been no discovery of mineral resources in their territory: Bolivia's mining law supercedes all other law and allows those obtaining concessions considerable leeway in terms of environmental damage. Other laws presently under review govern water, hydrocarbon extractions, and biodiversity and genetic resources. The draft biodiversity law would give the federal government complete responsibility for managing the natural flora and fauna of the entire nation plus all rights to commercial benefits from the genetic material.

III. Community-Based Resource Management

The Sirionó are caught in a bind. They have established legal claim to much of their territory, but do not control its resources. To secure title to their land, ward off outside threats, and earn cash needed to supplement their subsistence economy, they may feel compelled to choose a course that will destroy their resource base. Most NGOs have focused on income generation rather than sustainable development. Perhaps that is because community-based natural resource management that includes the promotion of sound economic opportunities would require a long-term commitment of resources to local capacity building. NGOs with short-term outlooks are often reluctant to invest in results that are likely to materialize only down the road on someone else's books. This section will look at precursors in wildlife

research that helped spark local interest in sustainable management, and then examine efforts by an exceptional local NGO, CIDDEBENI, to help the community develop an integrated resource management plan.

3.1 Game Counts and the Seeds of Resource Management

Some of the first seeds for sustainable management were sown in 1987, with field research undertaken by anthropologist Allyn M. Stearman from the University of Central Florida. Stearman studied Sirionó natural resource use and recorded a 90-day measurement of game and fish extraction. The Sirionó found the process and their visitor interesting, and this paved the way for a two-year study by one of Stearman's dissertation students. Despite pressure from the missionaries, who saw their grip being loosened, the community decided to participate in the study because they saw how the research could prove to outsiders that the Sirionó were using a much larger territory than the village of Ibiato.

The follow-up study began in 1991, and was targeted at measuring the game, fish, and honey used by the Sirionó over a long enough period to enable an estimate of the territory required for sustainable harvests.[3] Community involvement was tremendous because people saw how this information would buttress their claim to the land. Foreign scientists and Bolivian university students were welcomed into the community and given open access to what was hunted and caught and gathered. Many friendships formed as biology students worked hand in hand with Sirionó assistants in measuring the game, fish, and honey harvests, and the close collaboration insured that the skill for measuring future harvests was transferred to members of the community. Six Sirionó were trained in detailed data collection, while various hunters helped weigh game and took detailed field notes about their kills.

Measurements were made by observation during the 1991 harvests and by self-monitoring the next year. During 1992, 19 of the approximately 46 hunters monitored their own game harvests, faithfully registering their game in booklets supplied through grants from the Biodiversity Support Program (BSP)/WWF, and the Wildlife Conservation Society (WCS). Results showed wide variation between the 1991 and 1992 harvests taken in by most of the 19 hunters' 11 households, but average daily biomass harvested per person (0.34 kg) did not differ significantly (Townsend 1997). The monitoring would not have worked so smoothly without the widespread literacy instilled by the mission school, but the hunters' thoroughness and persistence probably stemmed from their excitement in finally finding a practical way to apply little-used writing skills to benefit their community. Perhaps personal pride in hunting prowess also played a part, but the rationale for boasting was minimized since the research focused on numbers rather than exact details of hunts. Since game is seldom secretly brought to Ibiato anyway, what was new was not knowledge about a specific hunter's ability but a growing awareness about the total collective harvest. This experience in self-monitoring created baseline data to show hunters changes in the abundance or scarcity of game, and woke community interest in resource management. Some of the hunters continued to fill in their data booklets years after the study ended, and what they found fueled suspicion that game was not as plentiful as before. Eventually this would lead them to request that a way be found to renew the monitoring on a formal basis.

3.2 An Integrated Community Forest Management Plan

A major step forward took place in 1996, when CIDDEBENI, a local NGO that had assisted the Sirionó since the early days of the indigenous rights movement, intensified its involvement. The NGO had focused its attention on securing a territory, supporting the Sirionó during the protest marches, and providing counsel during the negotiations that followed. It advised the community about the legal hurdles that had to be surmounted and provided technical assistance for land demarcation. With CIDDEBENI's help, the Sirionó reconnoitered where their ancestors once roamed freely and used Landsat imaging and GPS technology to delineate the 30,000 hectares in the San Pablo Forest that was given to them by Presidential Decree 22609. They focused on high ground that was at least 5 to 10 kilometers from the road, did not overlap with cattle ranches on savanna lands or timber concessions in the forest, and was contiguous with the area speci-

fied by the 36 traditional landmarks cited in the executive order.

When the new legislation began its passage through the legislature, CIDDEBENI realized the opportunity and danger it posed. If the community could develop a plan to manage its forest resources, it would have the leverage to push forward and consolidate what the presidential decree had promised. If the community did not act, the new laws could be turned against the community and all that had been gained might be lost.

To its credit, CIDDEBENI realized that for any victory to be lasting, the community would have to take charge. But it also knew that the community did not have the skills or the awareness yet to meet the challenge it faced. With preliminary financing from the International Work Group for Indigenous Affairs (IWGIA), a donor based in Denmark that supports training in self-governance, CIDDEBENI helped the community survey its needs, set priorities, and identify what had to be done to meet them. The Sirionó identified several areas for attention (CIDDEBENI 1996). The two at the top of the list—territory and health—were to be expected, given the history of the past half-century. In descending order the remaining priorities were education, organization, cattle husbandry, overuse of plants, lack of arable land, overexploitation of wildlife, facilitation of honey production, commercialization of local products, and the need for outside work.

Participants concerned with each priority were then asked to analyze its problems in detail. Those concerned with wildlife, for instance, reported that game was growing scarce in the traditional hunting grounds and hunters must travel farther from the community to find it. Possible reasons for this were outside poaching because the territorial guards were ineffective, and the absence of internal controls over the harvest. Analysis of plant overexploitation led to similar findings, and a list of threatened wood plants was drawn up. Participants noted that medicinal plants were also being lost, along with the knowledge of how to use them. Gradually the dialogues in these small focus groups moved to communitywide planning sessions at which conflicts and connections that were hidden became apparent. Thus awareness grew that people cutting dead trees for firewood were competing for a common resource with those hunting honey, since some native bees require hollow logs for their hives. This led people to think about the lack of forest resource management and administration not only for fallen but for standing trees.

When the diagnostic survey was complete, IWGIA funded community development of a resource management plan and its partial implementation. Technical assistance to help the Sirionó handle their 200 cattle is being funded by the Japanese donor JBN. But the core of the community effort is an integrated forest management plan with two primary components—for firewood cutting and honey production—and research to add a third component for wildlife. CIDDEBENI, with IWGIA support, is teaching the Sirionó how to inventory their woodlands and develop rational schemes for firewood and honey production that can be presented to the Bolivian Superintendent of Forests as required by law.

The driving force behind the forestry management plan has been the exploding firewood market. Outsiders constantly pressure the Sirionó to sell timber, especially what remains of the hardwoods, but many other trees are useful as fuel. Fortunately, since 1991 the community organization has been strong enough to legally repossess wood taken by pirate loggers. But the situation is complicated by the fact that individual Sirionó and the community organization have been making agreements with outsiders for selective tree cutting. Since 1992 the extraction of firewood from the territory has skyrocketed, with thousands of cubic meters from agricultural clearing being sold to the ceramics industry in Trinidad alone. The integrated planning process is an attempt to bring order to a process that has been out of control.

Following is an example of how seriously the Sirionó are taking this opportunity. In January 1998, prior to approval of the management project, the Sirionó Council signed a contract with an outsider to cut wood to repay old community debts. The contractor agreed to pay Sirionó men to cut the wood with the community chainsaws, but only if the timber was priced cheaply. The contractor waited five months to call in his claim only to be greeted by an unwelcome surprise. Financing for the management project had finally been approved

by IWGIA, and the community was canceling the firewood contract. It chose to stick with its management plan and abide by forestry law. The contractor was accustomed to getting his way with indigenous people, and threatened to confiscate the community chainsaws he had taken for repair in January. Despite the fact that he might just get away with it, the entire community decided to stay the course. They would complete their management plan and master the new skills that required before selling any more wood.

The community is conducting inventories to estimate the rotation cycle of firewood trees, concentrating on fast-growing species. The community will also begin seeding forests with hive boxes, providing ample space for native bees to multiply. Since meliponid bee honey is a rarity on the world market, the Sirionó and their advisors hope to develop an exclusive market niche for at least some of the varieties.

At first, it seemed there would be no wildlife component. It was down the list in the diagnostic survey and no funder stepped forward eagerly to embrace it, perhaps because market applications seemed vague. Interest among hunters was high, however, especially among those who had participated in previous research studies and were eager to explore the possibilities. And there was an indirect indication that communitywide interest was deeper than it first appeared. An earlier reforestation project funded by TUFF went awry when the local NGO providing technical assistance insisted on growing hardwood saplings in the tree nursery because they had the highest cash value. It was only when a new NGO took over and let Sirionó choose their own trees that the project went forward. The Sirionó chose fruit trees they knew would be a food source for game.

Finally, a $2,000 grant from the Wildlife Conservation Society stimulated further financing from a CIDOB research project, funded by the British government's Department for International Development (DFID). This allowed the Sirionó to begin wildlife inventories as part of the overall forest management plan. The CIDOB project is designed to transfer research and analytic skills to communities by letting them play an active role in designing and implementing their own field studies in partnership with an outside technician. To help integrate results with the overall plan, John Kudrenecky, the Canadian forester already guiding the forest inventory, agreed to help guide fieldwork in the new study as well. With his help, and advice from CIDOB's research coordinator, the community designed its own data collection formats to census wildlife and monitor hunting. The intent is to assess the sustainability of peccary populations and set the stage for marketing the hides from a species that is a prime source of protein in the local diet.

The skills being learned are not simply technical; they involve making explicit what was often implicit in cultural practice and traditions. In the past, resource conservation was a byproduct of a nomadic lifestyle. Because the Sirionó moved on when resources became scarce, hunting ranges were allowed to regenerate naturally. Since the Sirionó have settled in Ibiato, their zone of influence has shrunk drastically. For decades game populations remained sustainable because of the source–sink phenomenon, in which the surrounding area produced enough wildlife to resupply the capture basin of the Sirionó. Large ranches in the area left the landscape relatively unchanged and fed their workers with slaughtered cattle. Now, with the along-the-road settlement of colonists who practice slash-and-burn agriculture and also hunt for subsistence, the regeneration time for game in the surrounding area has nearly vanished. Unfortunately the Sirionó did not understand this phenomenon when they requested their territory, but it is unclear what difference this would have made, given the difficulty in establishing control over what was claimed.

The new Bolivian laws requiring a management plan for commercializing any wildlife resource are forcing the Sirionó to consider matters that would soon have to be confronted anyway. And early indications suggest they are up to the challenge. As previous work with wildlife studies in the early 1990s showed, the Sirionó have the literacy, numeric skills, and motivation to prepare management plans for sustainable harvests. What was needed was the opportunity and time for training in transect censuses and other related analytic skills. The research grant from DFID is making that possible, and what is being learned in counting peccaries can be applied to other animals as well. A number of Sirionó hunters are

engaged now in producing some of the first density estimates for various species ever completed in Bolivia. Typical data will cover over 350 kilometers of transects walked.

Discussions about wildlife management are also raising awareness of the double-edged dangers the community faces. As the Sirionó realize they have no control over land-use changes occurring around them, concern rises about the need to be extra vigilant over resources they do control. There is a voluntary territorial guard to ward off poaching, but as the survey showed it has had mixed success. Warding off neighboring colonists who hunt along the road and trails and at the water holes is one thing; sport hunters are quite another. They sometimes kill numerous animals in a night, often indiscriminately, leaving the less-desirable carcasses behind to rot. The exact toll is difficult to estimate because wounded animals often escape to die out of sight in the bush. The territory vigilance system has reduced poaching in recent years, but the community wardens have no official government standing and find it hard to face down rich hunters.

This increases pressure on the Sirionó for self-restraint if the game supply is to be sustainable. This is a challenge, but there are some traditions to build on. Holmberg (1969) noted that one band would not hunt animals near the campsite of another, perhaps out of respect for limits in game supply. Yet he went on to say that explicit ownership of a resource did not exist until it was actually harvested, and then it was considered to be private. The concept of personal ownership of material goods is the norm today in Ibiato, while the idea of formal legal ownership of a territory and its resources is quite new. So the Sirionó are struggling to reconcile community management of fixed natural resources with norms that permit individuals to use the resources for personal gain. They have to figure out how, as a community that has always had a very loose leadership structure, to police themselves as well as control outsiders.

Obviously this strain is not confined to the question of hunting but extends to other aspects of the forest management plan and to new kinds of wealth in general. The community, for instance, must decide how to manage use of a small truck that was purchased for the firewood project. Who gets to use it for what and when has generated impassioned discussions. Listening to some of the talk, one wonders if a major flaw in project design is also being exposed. There is a push to do everything at once while financing is still available. The IWGIA grant and most of the others have a time frame of three years or less.

Yet the road to self-determination is long and convoluted. The Sirionó have progressed amazingly far in evolving community institutions compared to a decade ago, but there is still farther to go if they are to successfully plan and achieve their own sustainable goals. The urgency for legalizing their commercial use of the resource base, forced by the new legislation, only makes the quick and easy answer of entering into subsidiary contracts with outsiders even harder to resist. One wonders what will happen if the near-term financing for setting up the integrated forestry plan runs out before community management processes cohere. What answer will the recently turned-away firewood contractor receive should he return on that day with a cut-rate offer of ready cash for timber?

IV. The Search for a Long-Term Partnership

The participatory planning process sparked by CIDDEBENI has been exemplary. It is being guided by awareness that indigenous people wish to participate on all levels of a project—from research, to planning, to implementation. If the goal is sustainability, this makes good sense. Community members are likely to be in possession of vital information without which a project is likely to fail. And by developing the skills to manage project activities, indigenous people further their capacity not only to defend their land but also to manage it for future generations.

Environmentalists can contribute by providing communities like Ibiato with key information they need to make wise choices. Working at the community's pace takes patience, but it is the only way to build a foundation for lasting partnerships in areas of mutual interest. Several lessons can be gleaned from the first steps toward forest and wildlife management now under way. First, the Sirionó, like other indigenous groups in Bolivia, clearly want to participate actively in the management of their natural resources. They have shown an insatiable hunger for training in

these topics in workshop after workshop. Both CIDDEBENI and CIDOB have emphasized the importance of holding training sessions in the community and opening them to everyone who is interested. In the past, individuals have left Ibiato for specialized training from NGOs, but what they have learned has been closely held. Perhaps this mirrors the Sirionó concept of ownership, with knowledge belonging to the person who finds and uses it. Opening information flows is essential if the community is to build the consensus that is needed to collectively manage communal resources.

Second, the training must be conducted as a dialogue rather than a monologue. In discussing the community's options and how environmental issues affect potential gains and losses, it is imperative to avoid jargon. CIDOB's experience in several Bolivian communities is that indigenous people will rarely ask for clarification of terms that they do not understand if they sense the purpose of the encounter is not a two-way exchange of information. Like most nonspecialists, in fact, they simply stop listening. Even though both sides in Ibiato may speak Spanish, the technician must listen carefully if he or she hopes to speak clearly and be understood in turn.

To further this process, it makes sense to use bilingual training materials. Local participants may all read and write Spanish, but they are more likely to take ownership of the material when it is also expressed in Sirionó. They feel it helps keep their language alive and provides a quick litmus test of whether or not the materials are relevant.

Third, it is important to communicate with local leaders because they are often the gatekeepers of their communities. Of course outsiders are not always in the best position to judge who the leaders are. This is why starting activities in new areas as small research projects makes good sense. It allows both partners to learn more about one another, find out what the real issues are, and build the trust needed to devise solutions.

Finally, issues and concepts should be framed in ways that touch a local chord. Abstractions must be grounded, wherever possible, in local realities and values. Take the question of biodiversity. The Sirionó understand that their resource base is threatened. People know they are lucky to still have game, and are concerned that harvests seem to be shrinking since the first measurements several years ago. They have heard others complain about how poor the hunting is in neighboring villages, and have seen with their own eyes the changes to the landscape around them. They realize that they inhabit a complex system of resources and are looking for synergies that multiply returns rather than more intensive exploitation that cashes out a resource. They were the ones who broadened a reforestation project beyond hardwoods for export, to hardy native species that would provide a food source for game as well as firewood for local markets. The trade-off being worked out between bee and firewood producers is also based on multiple use of resources. Indigenous peoples have usually relied on a variety of sources for subsistence, and they seek to add income-generating activities to the mix. It is a lifestyle that mirrors and depends on the biodiversity around them.

Recently a workshop held in Ibiato to design the wildlife census introduced a larger notion of biodiversity conservation by talking about the immense Amazonian Corridor of which the Sirionó are a tiny and marginal part. Some of the fish that breed in local waters during the rainy season work their way much farther downstream. And the jabiru stork that arrives to feed on them is a mythic bird for the Xavante Indians in Brazil hundreds of miles to the north. Workshop participants expressed pride in having the opportunity to play an important role in keeping this system functioning, especially since changes to the land around Ibiato may make a Sirionó TCO a vital island for migrating species. Still, they wondered what direct benefits that role might confer.

One answer comes from an idea being tried elsewhere by other indigenous groups. Word has filtered into Ibiato about ecotourism, and the Sirionó quiz anyone who seems to know more about it. They like the idea that the land could be left much as it is and still provide the community with the basic elements of a good life.

And there are reasons for finding the idea plausible. The international airport at Trinidad is accessible, the pre-Columbian mounds are archeological sites available for exploration, wildlife can be viewed at water holes, and the people of Ibiato generally like visitors and have the language skills to communicate in Spanish. There

are also reports that some of the last remaining blue-throated macaws (*Ara glaucalularis*) are resident in part of the territory. The Sirionó are definitely intrigued by this option but not at all sure how to make it work. Residents have heard about highland communities like Taquile in Lake Titicaca getting into the tourist business without destroying the quality of local life (Healy 1982/83), as well as similar efforts by lowland Bolivian groups in Pilon Lajas, Madidi, Isiboro Secure, and other national parks. Now there is talk in Ibiato of family-run cabins that can be rented to visitors.

Of course, this dream is rife among many peoples worldwide—from Zimbabwe to the Ecuadorian Amazon. Finding what it takes to compete in this global market is probably beyond the Sirionó for the moment since it would require substantial outside resources to succeed.

Nonetheless the mere fact that the Sirionó have heard of the possibility and are interested testifies to the window that has opened up for international conservation groups to play a larger role. Only a dozen years ago much of what the Sirionó knew about the rest of Bolivia, much less the world, was filtered through the sensibilities of a few North American missionaries. The Sirionó now not only have a different set of missionaries, in the form of NGO staff members, to bring in the good news, they are plugged into their own indigenous networks. Transnational confederations like COICA and its national federation members are available as transmission belts for ideas and common concerns. The desire to defend their land and use it sustainably is widely shared among indigenous groups throughout the region and offers an immense opportunity for conservation groups willing to commit resources to build partnerships that preserve biodiversity.

Certainly the Sirionó are willing to play their part. They are about to make their first small contribution to building a more comprehensive database about the biodiversity of the Amazon Corridor. Results of their wildlife census are being written up for presentation at an international conference on wildlife being held in Paraguay, and Sirionó speakers will be there to deliver the papers.

When they look around at the other participants they will see many people of goodwill, some of them scientists in jackets and ties who are concerned about preventing global warming and preserving the world's genetic heritage. The Sirionó will also see other representatives from indigenous peoples who have been invited to this particular table to tell what they know. When they return home, the Sirionó participants are likely to have a fuller view of how biodiversity and cultural diversity overlap. And then they will look around and take up the work again of trying to make a living from the land.

They will examine the possibilities of sustainably harvesting Paraguayan caiman in addition to the collared peccary. The Sirionó sustainably harvested this species before the sale of wild animals was banned in Bolivia (Stearman and Redford 1992). Recently the government made an exception to the general prohibition in order to explore the possibility of a controlled caiman harvest from lowland Bolivia. The Sirionó wanted to participate but were excluded from the first trial harvest, which the government planned with three large ranches. The Sirionó must be ready to participate when and if the program expands from the experimental stage.

Capybara may also be an excellent commodity. They are abundant in the marshes of the proposed TCO, and are considered a pest since they can devour large tracts of rice or corn. Although they are not hunted for their meat, which is said to be bitter and carries the unfounded stigma of being a carrier of leprosy and other diseases, there is a demand for the skins, and the meat could find other markets outside the Beni where customs are different. Commercial feasibility is enhanced by the capybara's prolificity, and management tools have been developed in Venezuela for sustainably harvesting them. That task is simplified by their concentration around open water holes during the dry season, making them easier to census.

The potential for marketing collared peccary skins is also being explored. The skins are in steady demand by luxury glove makers in Europe. Presently the Sirionó waste their peccary skins because they cannot reach this market. Doing so will require a management plan for sustainable harvests and certification from the IUCN and other international organizations. Developing some of the tools needed for this is at the core of the wildlife censuses now under way.

The main limiting factor of all these income-generating ideas is the lack of business experience. The Sirionó run their household economies, but managing community finances is new territory. A microenterprise credit program that loans small groups $50 to purchase apiary materials could become a model. Whichever option finally emerges, the community structure (and municipal government) must play the role of watchdog over the commons. Here too the Sirionó are anxious to know more.

That brings us back to the integrated forestry management plan. The process facilitated by CIDDEBENI has been a major step forward, but its development-oriented funders have only committed themselves to a two-year program, a perilously short period for a natural resource management project, even under ideal circumstances. There has been insufficient time to explore options other than firewood production, and unless the NGO finds additional support elsewhere, the sustained monitoring and feedback effort this complex initiative needs to take hold and prosper may dry up. A well-designed, sensitively implemented effort may fall short because donors were locked into their own schedule rather than paying attention to the community's capacity to absorb and master needed skills. A succession of short-term projects is also not the answer since communities take their own time warming up to a professional, and by the time they do, the technician is already moving on to the next stop. This would be particularly destructive in the case of the Sirionó, who are trying to master the big picture.

As international conservation organizations think about working in partnership with indigenous groups, they need to keep this in mind and commit themselves to a longer-term process. This will give indigenous groups like the Sirionó and their prospective partners time to build a relationship and explore common interests in conserving the land.

Endnotes

1. I want to thank the Sirionó people for their participation and congratulate them on their excellent efforts towards self determination. I thank the funders of my research, which stimulated the process described in this chapter: the Biodiversity Support Program, World Resources Institute, The Nature Conservancy, L.S.B. Leakey Foundation, Scott Neotropical Fund, World Conservation Society, Organization of American States, American Association of University Women, and the University of Florida. I also thank those funders that have allowed the work to continue, including Tyresso Peace and Arbitration Society, International Work Group for Indigenous Affairs, World Conservation Society, and Department for International Development. I want to recognize the contribution of Zulema Lehm and John Kudrenecky, among others from CIDDEBENI, and the participation of the local indigenous organizations such as Consejo Sirionó, CPIB, and CIDOB.

2. Comparable figures for other rural areas and urban areas of the Beni are 75 percent and 87 percent, respectively (CIDDEBENI 1996).

3. What would become the Sirionó wildlife project began as my dissertation research project. It was supported by small grants from the L.S.B. Leakey Foundation; the Scott Neotropical Fund at Lincoln Park Zoo; the Program for Studies in Tropical Conservation and the Tropical Conservation and Development Program of the University of Florida; the Wildlife Conservation Society; the Organization of American States; the American Association of University Women; and the Biodiversity Support Program, a USAID-financed program with WWF-US, the World Resources Institute, and The Nature Conservancy.

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CHAPTER 6

WWF's Partnership with the Foi of Lake Kutubu, Papua New Guinea

Joe Regis[1]

I. Introduction

According to a legend of the Foi people who live along the shores of one of the world's natural wonders, Lake Kutubu was once not a lake at all (Craft Works 1992). It was a dry and thirsty valley nestled between limestone pinnacles. Men did not live there because the rains soaked into the limestone, leaving behind nothing to drink. But there were a few women who managed somehow to eke out a living anyway. One day a dog they owned came prancing into the village, licking his lips, the picture of health and vitality. Obviously he had found water, but where?

The women decided among themselves that the next day they would follow the dog to find out. They tied a strong string to his back leg while he slept, and rose the next day to follow close behind as the dog loped through the forest. Finally he entered a clearing where there was a huge tree, and without looking left or right he jumped straight through a hole in the trunk and vanished. The hole was too small for a person to squeeze through, but the women could hear splashing coming from deep inside. The thought of not being able to get at the water made the women angry, so they took their stone axes and whacked the tree again and again.

Finally it fell with a great crash. And close behind came a great spout of water that quickly spread over the land. The women ran as fast as their legs would carry them uphill, scrambled over rocks and snapped tree limbs, but still the water climbed faster and higher. They cried out spells and incantations, but were swept up by the rising water and drowned. They remain by the shores of the lake to this day in the form of palm trees.

For uncounted generations, the ancestors of the Foi lived by the waters of Kutubu, which means "the lake that came out of a tree." The landscape was lush and abundant, and it was difficult to

imagine how any of this could change. But in the 1980s another hole was opened in the Earth, releasing a different kind of flood. The discovery of petroleum brought a tide of change that still has not crested. Like the first flood, this one is fraught with peril and opportunity. The oil consortium has pledged to funnel resources into efforts led by WWF to manage the change so that the people who live in the area can preserve their resource base and the richness of their own cultures. Not all of these efforts have fared well, but one in particular, focused on the rare fish that inhabit the lake, has shown great promise as a model that local people can build on and follow.

This case study examines that effort. To provide context, it begins with a country and regional overview of the land and its people. It then looks more closely at how the Lake Kutubu Fish Management Project evolved. It concludes by drawing lessons that may be useful to others.

II. An Overview

Papua New Guinea (PNG) comprises the eastern half of New Guinea, the world's largest and highest tropical subcontinental island; the islands of Bismarck Archipelago; the northernmost part of the Solomon Group; and some 600 smaller islands. PNG's 465,000 square kilometers support a remarkable range of equatorial ecosystems—from high alpine peaks that are periodically dusted with snow, to extensive pristine tracts of steamy lowland tropical rain forest snarled by river deltas. And this landscape is home to one of the planet's most unique and diverse biological endowments. PNG is estimated to accommodate 5 percent of the world's biodiversity in less than 1 percent of its land area.

The mainland coastline is rich in species and includes extensive mangrove swamps, lagoons, wetlands, coral reefs, and atolls. Inland is one of the world's last frontiers with extensive stands of tropical rain forest, totaling some 36 million hectares, or roughly 80 percent of the country's total land area. The forest flora is one of the richest on Earth and exhibits high endemism, about 53 percent.

This bounty has sustained human subsistence for millennia and continues to provide for the more than 85 percent of the population who reside in rural communities. The incredible natural diversity is mirrored by PNG's unparalleled concentration of ethnolinguistic and cultural diversity. The population of 4.9 million people is divided among more than 800 languages and nearly as many cultures. This is perhaps the only country in the world where indigenous peoples make up more than 95 percent of the population and where more than 97 percent of the land is still controlled by indigenous landholders under traditional systems of tenure. Indigenous communities are closely tied to the ecosystems they inhabit. Renewable biological resources are the mainstay of these people and provide the foundation for sustainable economic growth and new employment.

The forests provide people with remedies for illness and material for traditional homes and clothing, and are the domain of ancestral spirits that extend far back in mythological time. Since traditional tenure prevails, local people are the stewards of the forests on which they depend. Resource and ecosystem conservation is not only essential to the well-being of communities, but is also in their hands.

2.1 Land Tenure

Most land in Papua New Guinea is held in common by kinship groups under customary laws that generally set out permanent and absolute rights. Knowledge of land rights and boundaries has been passed orally from generation to generation. There is no system of registration or documentation to provide legal proof of ownership. Past attempts by colonial administrators and more recently by a World Bank/IMF-sponsored "Land Mobilization Program" to register titles in the name of "development" have met with fierce resistance and failed.

Customary land is alienable under terms that vary by group, although ownership is confined to the biological resources within a given area and does not govern subsoil usufruct. This is one of the few areas in which the modern legal system has jurisdiction over changes in ownership. Only 3 percent of all land has been alienated, most of it held in government leases and the rest in freehold titles granted before the early part of the twentieth century. Any acquisition of territory by the state is subject to provisions of the Land Act that require an exclusively "public purpose" and "a reasonable justification."

Some legal provisions would seem to include conservation as one of those public purposes. The fourth goal of the Constitution calls for the conservation and use of natural resources and the environment "for the collective benefit of all" and in ways that guarantee "replenishment for future generations." The Directive Principles of the Constitution advocate "all necessary steps…to give adequate protection to our valued birds, animals, fish, insects, plants and trees." Yet constitutional protection also gives customary landowners protection from usurpation, deprivation, or infringement of their rights to property. In practice this means that any conservation efforts, even those that are state-led, must involve the full participation of landowners in the planning and decision-making process and enlist their cooperation in order to succeed.

Disputes over land are common and traditionally often led to warfare that settled things for a time but planted the seeds of the next conflict. The Land Disputes Settlement Act of 1975 tried to bring some coherence to the process. Covering disagreements over boundaries, customary ownership, usufructuary rights, and other claims, the act establishes a legal framework for amicable mediation that extends from local land courts to appeals at the regional and national levels. But the act cannot guarantee certainty of title by a decision at any level. Since decisions occur only within the context of customary rights, they are subject to later disputation should circumstances change among the contesting parties. Landowners do not have the right to mortgage their property under customary law, and banks generally are unwilling to issue loans using customary land tenure for collateral.

2.2 The Kikori Integrated Conservation and Development Project (ICDP)

The Kikori Integrated Conservation and Development Project (ICDP) was established in 1993 with funding from an oil consortium to promote sustainable development among the peoples of the Kikori River watershed. Phase I of the ICDP ran from 1993 to 1997, and Phase II began in 1998 and will run through 2000. It covers a mostly tropical rain forest area of more than 2.3 million hectares, or approximately 23,000 square kilometers in the Gulf and the Southern Highlands provinces of PNG. This area represents 6 percent of the country's land area and harbors 30 to 50 percent of New Guinea Island species in several major animal groups (see map 6.1) (Leary et al. 1996).

The Kikori River catchment is a vast, intact, and largely undisturbed biogeographic unit. The area is very diverse in topography, landforms, relief, soils, and vegetation. It extends from the precipitous Doma Peaks in the Southern Highlands to the Gulf of Papua, encompassing habitats as distinct as Lake Kutubu, the nation's second largest freshwater body; the Great Papuan Plateau; rugged limestone ranges; extinct volcanoes; extensive tropical rain forests; and complex lowland river deltas.

Recent surveys across key sites in the project area testify to the high level of biodiversity. The project area is also rich in cultural diversity, with about 20 different ethnolinguistic groups among the more than 80,000 people.

The Kikori ICDP was envisaged as a pioneering model project that would enlist maximum community participation to achieve conservation and sustainable development initiatives. Its ongoing mission is to help local people identify and refine culturally appropriate strategies to improve their subsistence and generate needed income, while protecting the long-term resource base of biodiverse ecosystems in the area.

The diverse stakeholders involved in this process include local landholders and their organizations, national and provincial government agencies, Chevron Niugini and its joint venture partners, and various nongovernmental organizations (NGOs). The collaboration between WWF and Chevron and its partners is a pioneering effort by the oil industry to demonstrate responsible corporate citizenship in the communities affected by its business activities. Chevron Niugini and its joint venture partners have provided substantial funding to the project to protect the rich biodiversity of the Kikori watershed region and benefit its people. The environmental impact of the oil project has been minimal.

Most of the communities involved are in areas that are remote even by PNG standards. They are thinly populated and widely scattered, they lack basic services, and they are on the periphery of the market economy but feel its pull. They are blessed with abundant natural resources.

In general, they want project activities to generate cash income and improve access to basic services. The resources they own, particularly the forests, are perceived to be the sole means of achieving these goals. Therefore, they are extremely vulnerable to timber companies that employ devious means to lure landholders into contracts for industrial logging. For many communities, logging has become almost synonymous with development.

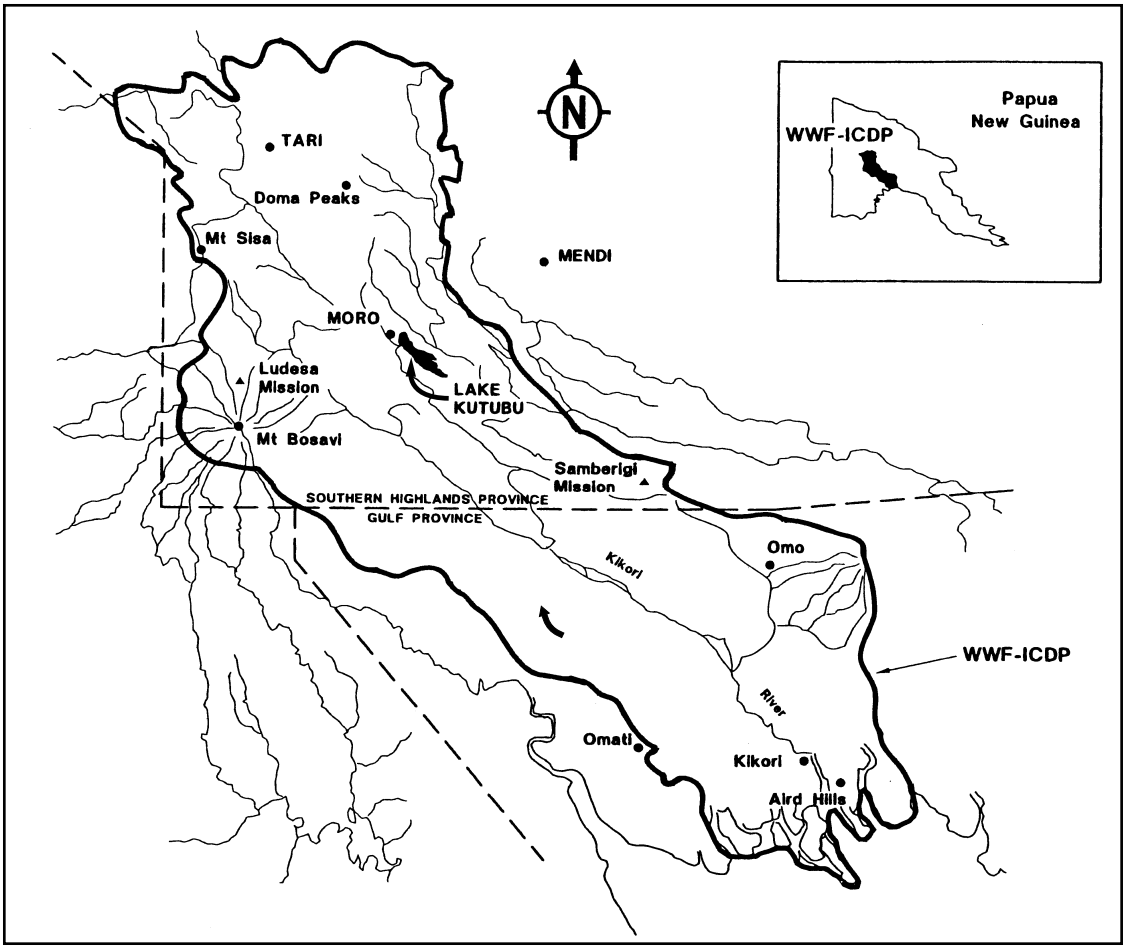
III. Lake Kutubu and Sustainable Resource Management

This case study focuses on one small component of the Kikori ICDP and covers an area of less than 8,000 hectares or less than 3.5 percent of the total project area. It examines the partnership that WWF developed with the Foi people living on the shores of Lake Kutubu to help them develop and manage sustainable subsistence fisheries. The ecosystem involved is the catchment area of Lake Kutubu, which is held in customary ownership by the clan groups of villages around the lake (see map 6.2).

Lake Kutubu is Papua New Guinea's second largest lake and its largest mid-altitude lake. This inland freshwater body sprawls over approximately 4,930 hectares nestled in mountainous terrain 800 meters above sea level. The lake lies in a narrow valley flanked by rugged limestone ranges and precipitous hills that jut up 1,400 meters high and are covered by pristine tropical rain forest. The lake, which has a maximum depth of about 80 meters, is approximately 18 kilometers long and about 4 kilometers across at its widest point.

The people living along its shores call it the "mother of water." Geologists suspect the lake

Map 6.1 The Kikori River Watershed Area Covered by the Kikori ICDP



Source: Steve Wright, Chevron

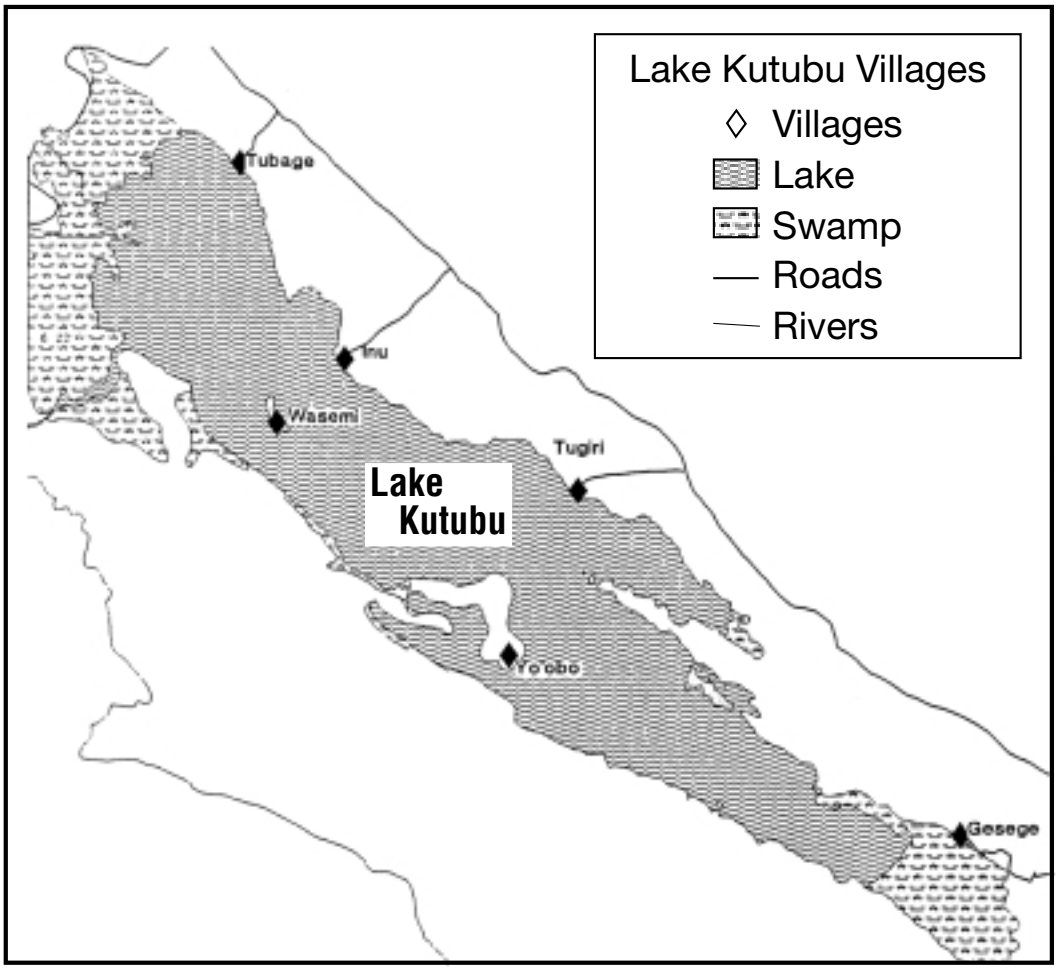
was formed some 10,000 years ago when its southeastern end was blocked by volcanic deposits (Sullivan et al. 1990).

3.1 Biodiversity Value of Lake Kutubu

Lake Kutubu is of global significance and has been described as the most unique lacustrine habitat for fish in the entire New Guinea and Australasia region (Allen 1995). No other lake in all of Oceania has as many endemic species. Of the 16 freshwater fish species occurring in the lake, at least 12 are not known to occur anywhere else in the world (Allen 1995; T. Leary, personal communication).[2] Another four species of freshwater fish and two species of crustaceans have been recorded either in the lake or in the streams that feed it, constituting a total fishery of 22 species on which local people can draw. Only lakes Sentani and Jamur in Irian Jaya are richer in the number of freshwater fish species, but their fisheries do not exhibit a comparable level of endemism.

The diversity of terrestrial fauna in the area is also great. Burrows (1995) recorded 146 species in the Moro/Agogo/Lake Kutubu region. Jaensch (1997) recorded a further eight bird species. Orsak and Eason (1995) recorded a high diversity of 656 moth species at a site near Moro, not far from the lake. Lake Kutubu also supports more species of birdwing butterfly than any other known site in PNG (L. Orsak, personal communication). Balun (1995) states that the flora in this area also has some unusual aspects, such as the occurrence of *Nothofagus grandis* at altitudes as low as 800 meters. This species usually occurs above 2,000 meters. Another unusual plant occurrence is that of *Tapeinocholos* sp., which is normally a lowland species but was recorded in this area 800 meters above sea level.

Map 6.2 Location of Major Villages on Lake Kutubu



Source: Leary 1997

Leary and Serin (1997) recorded 31 species of native mammal on Mt. Kemenagi, which rises above the lake. This included the rare long-beaked echidna and the rare three-striped dasyure. A new rat species (*Rattus nov.* sp.) was also discovered in abundance on Mt. Kemenagi during the survey.

Jaensch (1997) observed the occurrence of swamp forest on peat substrate occupying an area of approximately 1,000 hectares. His preliminary investigations suggested a rich diversity of plant and animal species. It is suspected that the peat swamp forest may also play a critical role in filtering floodwaters before they reach the lake and preventing degradation by silt and pollutants.

3.2 The People of Lake Kutubu

The inhabitants of the shores of Lake Kutubu are culturally part of a larger grouping of 169 clans called the Foi, who also inhabit the broad Mubi River Valley and the area east of the lake near the border of Southern Highlands and Gulf provinces.

Large tracts of uninhabited forest and mountainous terrain separated the Foi from their closest neighbors until recently, when roads were built for oil rigs. The group most closely related to the Foi, both culturally and linguistically, are the Fasu, 1,200 of whom live southwest of the lake toward the upper reaches of the Kikori River in an area east of Hegigio River. The Foi of Lake Kutubu traditionally have accepted Fasu immigrants and intermarried with them.

Foi people speak Foime, which has only minor dialectal differences from the Fasu language. In all, there are around 7,000 Foi, dispersed into three geographical groupings. The biggest group lives in villages along the upper Mubi River in the Pimaga area, southeast of Lake Kutubu. They are called the Awamena, or the northern hill people.

The smallest group is the Foimena, or Foi people. They are often referred to as the Lower Foi since they live along the lower Mubi River south of Pimaga. Some of their villages are very remote.

The 1,600 or so people living on Kutubu's shores are called Ibumena or Gurubumena, or the Lake People. They are a mixture of Foi from the upper and lower Mubi River, and the previously mentioned Fasu people. There are seven main villages and a large number of small settlements, some consisting of only one or two families. The Lake People still lead a largely subsistence lifestyle, relying on fish and sago as dietary staples.

The Foi are one of nearly 20 ethnic groups in the Kikori River catchment who pursue similar subsistence lifestyles. However, several environmental and cultural differences distinguish them from their neighbors.

3.3 The "Long House" Community, Social Organization, and Leadership

The hallmark of a Foi village is the centrally located long house. The culture is strongly communal, and the long house symbolizes that. It is the social and ceremonial heart of the village and reflects how the community is organized. All important political and social events and decisions take place there. It is also called the "men's house," because all male members of the community, married or not, live there. Women are not allowed inside, a practice that clearly demonstrates how women are peripheral to the social and political processes governing the community. By tradition, they live with their children in small separate houses that flank either side of the long house. Behind each of these rows there is usually a "confinement" house for women who are giving birth or are in menstruation.

The long house is usually bisected longitudinally by a central corridor. On either side, sleeping platforms rise up about 10 inches off the floor, separated at regular intervals by fireplaces or fireboxes. To those who can read it, the occupation of specified quadrants in the long house by individuals and groups provides a social map of their leadership, status, and social alliances.

Every individual has a web of relationships determined directly by descent and kinship, or through affinal links when an outsider marries a local woman. One claims rights over land and resources or obligations from relatives by invoking these relationships. The dominant mode of descent is patrilineal, which confers membership in a clan. Each clan is figuratively referred to as a tree, and kinship ties are described by tracing its branches.

Foi clans are totemic and few in number. They are spread over many long house communities, however, so that each long house is associated with two or more other communities to form distinct units that are described as regions, tribes, or extended communities. The land-holding unit of

a particular long house is the clan segment whose members reside there and share food together. Individuals inherit from their ancestors the right to use certain pieces of the clan's territory, and this right is often continuous so long as the land use is maintained. Right to unclaimed land can be asserted by continuous use of it. Each long house community also has territories, usually hunting grounds held in common by the men.

Traditionally Foi communities were not headed by chiefs, but were dominated by "big men" whose leadership was earned rather than inherited. Rather than invoking institutional authority, big men relied on their charisma and accomplishments to wield power. In any given long house, two or three men always emerged as acknowledged leaders who had earned prestige and built extensive personal connections with other communities.

As we have seen with the sleeping arrangements and the discussion of land rights and clan and affinal ties, each community is like a web in its formation. The ability to negotiate the strands of divergent interests and their connections to other communities shapes the pattern of leadership and the range of power and influence each leader can exert.

Among the Foi, complex networks of marriage and matrifiliation between individual families cut across the grain of long house community organization so that a web of personal and familial alliances, rather than any formal political unity, link communities together. Individuals or individual families, by and large, alter the balance of forces, influences, and interests that link the various communities.

However, the petroleum project has altered the terrain in which leadership functions and created new institutional forms for dealing with social and economic relations beyond the scope of traditional means. National legislation established a framework for setting up legally chartered Incorporated Land Groups (ILGs), Landowner Companies (LANCOs), and Landowner Associations (LAs). The Incorporated Land Groups Act authorizes landowner ILGs to negotiate with government, companies, and developers and receive royalty, equity, and compensation payments. The Business Groups Incorporation Act enables ILGs to establish LANCOs to engage in commerce, provide direct or indirect employment, and undertake contracts or subcontracts from developers. These two pieces of legislation have enabled customary land groups to enhance their collective decision capacity and create a more formal leadership structure. Collective decision capacity is further enhanced when ILGs band together to form a Landowners Association to negotiate better terms from an outside developer. These new formalized institutions have played a significant role in helping landowners get a fairer deal from developers and the national and provincial governments, and have generated spillover benefits for communities. But these institutions also suffer from clan rivalries, mismanagement, and corruption.

They have not ended the old disputes, but moved them to a new battleground on which finding resolution requires new tactics and leadership skills. Major development activities such as logging, mining, or oil extraction tend to escalate existing land disputes and revive dormant ones because of the revenue streams they generate. The 1997 Social Impact Survey carried out for the Moran oil project near Lake Kutubu found a 700 percent increase in land disputes within a five-month period and a doubling of disputes in the Kutubu petroleum development project area. Similar reports came from the Gobe petroleum project area not far from the territory of the Lower Foi.

3.4 Gender Relations

In Foi society, all major social process begins with the culturally defined and historically determined sexual separation of men and women and distinction between male and female dominions. Traditionally, Foi women had no role in the leadership structure and were excluded in all decisions governing land and other resources. The process of change initiated by developments such as the petroleum project has had little impact on the traditional status and role of women.

Although men and women as married couples are responsible for generating food for the family, there are clearly defined gender roles in the division of productive labor. Traditionally, men take their wives and children and live deep in the bush for weeks or even months during the hunting season. The men do the hunting for flying foxes, cassowaries, birds, tree kangaroos, and snakes, and butcher, cook, and distribute the meat. Women help with fishing, and also forage for

bush fowl eggs, edible wild plants, and small animals that can be caught by hand.

Even in the garden, where women do most of the planting, weeding, and harvesting, men have a controlling role. They clear the space and control the planting and cooking of certain crops, such as banana, breadfruit, ginger, and sugarcane. Crops controlled by women include the sago palm, greens, and vegetables.

The Subsistence Fish Catch Monitoring Program of Lake Kutubu identified that women did most of the fishing, but men dominated the use of spearing, spear-diving, and mixed gill nets. The prevailing pattern of gender relations and the exclusion of women from decision-making processes would limit partnership in the fishery project with WWF.

3.5 The Changing Culture of Resource Management

The Foi, like other indigenous peoples in PNG, are tied on many levels to the land and its plants and animals. Local people value Lake Kutubu not only as a provider of sustenance, but also as a fount for their social identity and cultural survival.

Foi subsistence activities include slash-and-burn gardening, tree-crop cultivation, fishing, hunting, foraging, and pig husbandry. The sago palm is a multipurpose resource. Sago is the staple food, and women spend considerable time processing the starchy pulp year-round. The palm also provides building material for houses and fodder for pigs, and is a source for protein-rich grubs.

Forests provide materials used for rituals, sorcery, and body decorations. For generations they also have provided items that the Foi could trade to acquire what was scarce or otherwise unavailable. Traditionally, economic productivity did not result in the accumulation of wealth, but provided the means for ceremonial feasting, exchanges, and presentations that nurtured social and political harmony and stability within the community and between the community and its allies, rivals, affines, and trading partners. Exchange and reciprocity are foundational not only among the Foi but are underlying principles of Melanesian social and cultural organization generally.

Foi culture is closely attuned to the natural world through changes in resource availability during the five recognized seasons. These changes affect the diet, the distribution of labor among men and women, the pattern of resource use, residential patterns, and other activities, and reinforce the apparent seamlessness of nature and culture.

Foi clans are totemic, and the Foi believe the spirit that animates the body and leaves it in death also inhabits certain plant and animal species. For instance, a man who is murdered or killed during battle becomes far more dangerous and takes the form of a cockatoo. Some departed spirits inhabit *tabia* trees, whose bark is used to cure *genaro* sickness. In addition to ghosts of dead people, the forest is alive with other dangerous spirits that take revenge and cause illness when certain conditions are not met or transgressions occur. Feelings of reverence and fear, embodied in myths and beliefs, shape how and when resources are used and who may use them.

Because the social and cultural fabric is so tightly interwoven with the biodiversity that provides material sustenance, the Foi perception of "ecosystem" is markedly different from the Western scientific concept. The natural world includes human beings and their spiritual, cultural, and economic activities from resource-use patterns to gardening cycles to modes of territorial ownership. The Foi do not see themselves operating on the ecosystem but participating within it. This cosmic unity becomes a celebration of "a community of life" in which there is interdependency and harmony among humans and nonhumans. To the Foi, biodiversity is the "capital inheritance" that has sustained them for millennia and provided the affluent foundation for their culture.

The cultural value of individual flora and fauna, however, may transcend their biological importance in the ecosystem. So the indigenous peoples of PNG are not passive parts of the ecosystem. They have had impact on the environment. Vast anthropogenic grasslands in the highlands testify to how traditional societies since antiquity have modified the natural environment in meeting their subsistence needs.

It can be argued that whatever conservation has occurred was a product of circumstance rather than intention, and transpired because population densities were low and technologies simple (Bulmer 1982). Though drawing generalizations in PNG may not be appropriate due to its cultural

heterogeneity, it may be said that the relations of the forest-edge communities to their environment was largely mediated by traditional religion and beliefs about sorcery. Restrictions on natural resource use that resulted in conservation were largely aimed at protecting the welfare of humans and inspired by the need to assuage forest spirits, or *masalai*. This reveals a dichotomy, beneath the surface unity, between the "natural world" and the "social world." The Foi believe the former is owned and tended by the masalai, while the ancestors protect the latter. Bulmer suggests that this traditional cosmogony may be incompatible at its root with the notion of conservation because it blurs the causal relationships between human action and environmental degradation. Caught between competing explanations of sorcery and the wrath of ancestors or *masalai*, the governing assumption is that man, not nature, is vulnerable.

Because there is no experience of resource scarcity or large-scale environmental disaster, a utilitarian view prevails. People are generally concerned with the immediate benefits of hunting and gardening rather than conscious of a need to manage resources sustainably. In contemporary PNG, monetization of the economy, increased exposure to the outside world, changing consumption patterns, and population growth have changed the balance. Attitudes that underlay hitherto benign subsistence practices are being transformed into ecologically damaging ones. Land and other resources are increasingly perceived as a potential source of cash to meet expanded needs that have been stimulated by the influx of enormous private overseas investments in natural resource extraction.

Thus far notions of conservation have centered on preserving traditional claims to land and its resources. This, too, poses a hidden danger to the environment. Ownership can be weakened or even forfeited by nonuse of land and its resources. Land claims are thus in constant peril from other individuals and groups, and must be constantly renewed either through active use or by bestowing temporary usufruct to others (Giddings 1984). The pivotal question that remains undecided here and elsewhere is what constitutes proper use.

Conservationists thus face the problem of finding access points within a given culture in order to raise their concerns and have them heard. Environmentalists view nature as vulnerable and believe it is the responsibility of humankind to protect and preserve it. For indigenous landowners, nature is often a powerful omnipresence that falls outside human control and responsibility. For most indigenous communities, the natural environment is not something apart, to be valued for itself. It is what provides for their needs. Perhaps the most pressing of those needs is the desire for cultural integrity and continuity that can be bequeathed to future generations. Environmentalists need to learn how to make their case for conservation of biodiversity by finding and developing strategies that allow people to see how their cultural identity is linked not only to protecting their claims to the land but to sustainably managing its resources.

This is even more complex than it sounds since the cultures in question are often under duress or are no longer intact. In the case of the Foi, recent changes brought by Christian missions and then the petroleum project have introduced new responsibilities and social and economic activities that have profoundly altered the traditional lifestyle and worldview of the lake communities.

3.6 The Impact of Outside Influences

It was only in 1935 that the expansive mountainous territory now known as Southern Highlands, where Lake Kutubu is located, was first explored by an Australian patrol team dispatched by the colonial government in Port Moresby. The first white man to view Lake Kutubu did so the following year during a reconnaissance flight across Foi territory. In 1937, a patrol post was established in a lake village to serve as the staging point for intensive exploration and consolidation of colonial administration in the Highlands.

The uncanny and dramatic nature of the first contact was a harbinger of the change that Western technology and political control would bring to indigenous groups in the next few decades. To some extent the expansion of colonial dominion was limited by indigenous communities' inalienable hold over the land and its resources. Although the Foi had the longest history of permanent contact with colonial administration of any group in Southern Highlands, they experienced no significant economic development.

Soon after contact, however, fundamentalist Christian mission stations were established in Foi territory and protected by the state. As the state usurped tribal autonomy, the missions became agents of pacification. They were a major force in undermining the traditional way of life, and ceremonial dances, rituals, art, clothing, and body decoration began to disappear. This snapped the threads of connection between culture and nature, and would have far-reaching consequences. As prohibitions against violating the dominion of *masalai* and ancestral spirits waned, the forest-edge communities began to think of offers by commercial loggers as an easy road to development.

Finally significant economic development arrived in the form of the Kutubu Oil Project, operated by Chevron Niugini. This project, which spent nearly $1.5 billion (in 1992 dollars) on exploration and project construction, was the single biggest resource sector investment in the history of PNG. The sparse population within the Petroleum Development License area comprised only about 134 Fasu and Foi clans, each of which averaged about 10 to 15 members in size. A road was built at enormous cost to service the project, and ended in the blink of an eye the long geographical isolation of the Foi and Fasu from the outside world. Project development and construction were carried out between December 1990 and September 1992.

The benefit streams that have flowed to the affected landowner communities since then are worth tens of million of dollars. By 1995, the total benefits from royalty, compensation, and land use payments, a Special Support Grant, tax credit schemes, and direct and indirect services from developers amounted to over K69.6 million.[3] This does not include the K70 million in contracts negotiated with Landowner Companies and the projected equity payment of K62.85 million. The Kutubu Access Road and the Moro airstrip together cost about K91 million.

The impact of these benefits, however, has not been equal. By 1995, beneficiaries numbered about 427 clans and 13,750 people living in 84 villages in Southern Highlands and Gulf provinces. The Fasu, who numbered only about 1,500 people and 58 clans, were the largest beneficiaries. The Foi consisted of 169 clans and 7,000 people, but reaped a much smaller portion of income flows. The remaining 5,250 people, distributed in 200 clans, live in Gulf Province.

The Foi and Fasu, who traditionally enjoyed very strong social and cultural ties and shared similar subsistence lifestyles, were quickly divided by the huge economic chasm created by the unequal benefit streams from the petroleum project. The Foi benefit pie is about one-tenth the size of the Fasu pie, and must be shared among nearly five times as many people. This inequality has imposed serious social strains on the Foi and ironically threatens to be a curse rather than a blessing for the Fasu. WWF does little or no work among the Fasu people since their "petro-affluence" has minimized the common ground needed to evolve a meaningful partnership. The Foi have watched their Fasu neighbors drown in wealth as a flood of consumption has led to social and cultural degradation. The Foi believe, with reason, that the Fasu cannot sustain their present course without irremediable damage.

The Foi have also seen the impact on their own way of life. Stanley Wabi, for instance, is a community outreach worker in WWF's local program. His first experience with money came in 1980, when he was paid K6 for carrying the patrol box of a soldier. Wabi had no place to spend the money, nothing to spend it on. He depended entirely on game meat and garden food. Throughout the 1980s, unskilled labor could earn one about K10 a fortnight. But with the arrival of the oil project, opportunities for wage labor increased and pay rose to K200 or K300 per fortnight. The cash flowing from work with the oil project and its contractors and from royalty and compensation payments has created a miniconsumer economy. Reliance on subsistence foods is waning, and consumption of soft drinks, rice, sugar, and canned meat are on the rise. Subsistence production is increasingly thought of as hard, time-consuming work. Knowledge of plants and the natural world is in danger of being lost. Traditional authority and leadership is being challenged, and the young, drawn to Western ways, are becoming alienated from their own heritage. Today, Wabi is 34, and he and others of his generation see things slipping away. He and others say that their way of life can last forever but only as long as they look after their resources and use them wisely. Spared from the overwhelming temptation the Fasu face, the Foi

have seen the warning sign in their own communities, and this has paved the way for a stronger partnership with conservation organizations.

IV. Partnership between WWF and the Lake People

4.1 Establishing the Lake Kutubu Wildlife Management Area

In 1988, Kone Yore, a community leader from Tubage village, proposed that a national park be established around Mt. Kemenagi, which rises above Lake Kutubu at the southeastern end. The community knew very little about what establishing such a park would mean, but it supported the idea of establishing an area in which resources would be preserved for future generations. Kone Yore visited the Department of Environment and Conservation (DEC), which had jurisdiction of protected areas in PNG, to discuss the matter. He was surprised to hear that the National Parks Act required that parkland be ceded to the state. The community was not interested in surrendering ownership, and the idea was temporarily dropped.

In 1989 Chevron Niugini cleared an area near Gesege village to drill a test well. The community expressed dissatisfaction with the K1,000 compensation paid by Chevron Niugini for the clearing the site. The lake communities were also increasingly concerned about the potential impact of planned infrastructure, including the access road from Pimaga to the oil fields and the Moro airstrip. One community member, Sabe Ko'osabe, wrote and later visited the DEC to discuss the establishment of some sort of protected area around Lake Kutubu that did not require surrender of land ownership.

DEC suggested that a Wildlife Management Area (WMA) could be established under the Fauna (Protection and Control) Act 1978. A WMA does not require the surrender of land to the Crown, and does retain customary ownership. The act essentially enables local communities to establish rules for the management of fauna and flora habitat. These rules are administered by a Wildlife Management Area Committee (WMAC) appointed by the landowners. The government publicly registers a WMA once its boundary is demarcated, the rules agreed upon, and the WMAC members nominated. The rules then have the force of law. Unlike a national park, a WMA may be dissolved by landowners at any time, or its rules amended or altered. Landowners set the penalty for infringement of rules, and it is largely up to the WMAC to enforce them, since DEC has a very small rural presence.

For a WMA to be established, all landowners must agree to the establishment and to the rules of enforcement. Leaders from Gesege village approached Chevron for assistance to engage a consultant to help garner support for setting up a management area and to prepare the paperwork for registering it. Meetings were held in all of the lake communities, and broad support emerged to establish the Lake Kutubu Wildlife Management Area. Each community defined the boundaries of the land that members wished to include, and made recommendations for the rules of enforcement. The key issues that the community wished to address were

- control of land clearing;
- appropriate compensation for land clearing by the Kutubu Oil Project and others;
- the potential impacts of the Kutubu access road;
- achievement of balanced development; and
- improved management of traditional resources such as canoe trees, orchids, and black palm.

In 1991, Chevron Niugini provided surveyors to allow the boundary to be legally defined. In April 1992, DEC was advised of the communities' desire and readiness to establish Lake Kutubu WMA, the proposed rules of enforcement, the boundary description, and the members of the WMAC. The WMA was publicly registered on June 25, 1992, but for some reason the rules were not included in the official notice.

4.2 WWF's Involvement in Community Research

In late 1993, prior to commencement of the Kikori ICDP, WWF received a request from the Lake Kutubu WMA to help prepare interim management guidelines for the area. This assistance was provided and, through extensive community consultations, a more comprehensive set of management procedures and rules was developed in 1994.

The Kikori ICDP commenced in 1994 and an environment coordinator was recruited in 1995. Lake Kutubu and its WMA became a focus of work because of the uniqueness of its fish, its high biodiversity values, and the intensive nearby development. Environmental awareness activities were conducted in all the villages around the lake in 1995. Discussions with communities and formal workshops in the villages of Gesege and Yo'obo revealed the deepening alarm among the Foi at what was perceived to be a decline in fish size and numbers. This concern was expressed most keenly by several key clan leaders from Gesege, Tugiri, Yo'obo, and Wasemi villages. The Lake Kutubu WMAC echoed the concern, although some members may have been more interested in pursuing compensation from Chevron than finding methods to conserve fish populations.

Explanations for the decline of fish stocks were varied. Some people pointed a finger at the petroleum development—although there was no evidence to substantiate an impact apart from localized sedimentation from road runoff. Others discussed changes in fishing technology, and increased population around the lake. If there was no consensus about cause, the community meetings made clear that the level of alarm was acute and general. Fish were a prized food and the major source of protein, and they were getting harder to catch and smaller in size. Many people, especially older male clan leaders and women with babies, were concerned that their children and grandchildren would not be able to enjoy freshly caught fish from Lake Kutubu as they themselves had.

When WWF held community meetings and workshops to discuss this issue more fully, it became clear that knowledge was scattered. Individuals had a general idea of where fishing was best and how much fish they typically caught, but no one could quantify the catches, frequency of fishing, or the fishing ranges of the entire community. Although the men recognized that women spent much time fishing, many insisted that they contributed more fish to the average household than their women did. The women, on the other hand, believed that they contributed far more fish to the household. The differences in perception that surfaced at the workshop at Gesege village finally made it obvious that fishing had to be observed more closely to see who was participating and where, what methods were being used, and with what results. The communities and WWF agreed to start a program for monitoring subsistence catches and profiling the characteristics of the fishery, so that strategies for sustainable harvesting could be developed. WWF was careful to dispel unrealistic expectations. It would be vital to establish a baseline against which any future decline in fish catch and fish size could be detected.

4.3 Designing a Subsistence Fish Catch Monitoring Program

The concept of a fish catch monitoring program was discussed in detail with members of the WMAC, and WWF held meetings in all the lake villages to build consensus and participation. Each community believed that it was important for villagers to do the monitoring if the findings were to be credible.

The pattern of settlement around the lake made it impossible to monitor all canoe landing sites simultaneously. To maximize the efficiency of the effort, monitoring focused on the larger villages, which also tended to have fewer canoe landing sites. Villages were selected from all the major zones of the lake. Only two of the major villages on the lake were not sampled. Soro was omitted because of community disinterest—perhaps because many of the villagers were Fasu who had chosen to work locally for wages rather than spend their time fishing. Inu was omitted because it was likely to duplicate the results from another village that shares the same fishing habitats. Since both villages had a large number of landing sites, it seemed wiser to concentrate limited resources to make sure that all catches from one were recorded rather than partial results from both. Wasemi was selected because of the interest and enthusiasm of a number of key clan leaders.

WWF trained and worked with monitoring teams of two to eight members from the five selected villages. Monitoring was conducted for a total of 85 days. Monitoring began with a pilot study in September 1995 in Gesege, Yo'obo, and Tugiri to test and refine the methodology. Quarterly monitoring, with at least three days per quarter, then followed between January 1996 and February 1997 in all the villages. Larger villages such as Wasemi had more monitoring days.

A pair of trained observers was stationed at each observation point or canoe landing site to ensure that all catches were recorded. The observers noted the times of departure and arrival of all canoes in the area. When a canoe returned, the observers asked permission to examine the catch and interview the men or women who had done the fishing.

The following kinds of information were documented:

- *Catch composition* was determined by noting the number and type of each fish or crayfish caught, and identifying it by its Foi name or English common name;
- The total *weight of the catch by species*, including, where possible, individual weights and lengths;
- The *number of hour*s people spent fishing was determined by interviewing the leader of each fishing trip to see if other activities had occurred, such as bamboo collecting or gardening, and subtracting the time devoted to secondary activities from the canoe's departure–return log on the monitoring sheet;
- The *gender and age distribution* of people doing the fishing was loosely defined as men, boys, women, and girls (the age distinctions were somewhat subjective, but women and men were generally those who were married or of a marriageable age); the leader's name was also recorded, to help keep track of gill net owners;
- The *destination of the catch* was noted to determine whether it was for home consumption or sale;
- The *fishing gear and/or fishing method used* were noted, including separate notations for fishing and crayfishing equipment, and the mesh size of gill nets;
- The *fishing site* was recorded, using the Foi place names, to determine the intensity of fishing at each site; distances to the site were added later using CAMRIS, a geographic information systems tool.

For a variety of reasons, as in cases of people camping out overnight at bush huts, not all catches could be monitored. Wherever possible, fishermen whose catch could not be viewed directly were interviewed either the same day or the day after to gather data. The observers also recorded weather conditions and any other factors that might influence the amount of time spent fishing on a particular day, noting holidays, market days, community work days, church days, and compensation claim days on the record sheets.

The subsistence fish catch monitoring program produced a vast amount of data, and will provide ample baseline data against which to compare changes in the future. There were several key findings.

First, the fishery was found to be far more significant to the community than first thought. The annual catch for the entire lake was estimated to be 70.1 tons/annum. This is equivalent to 164,941.2 tins (425-g mackerel tins) of fish per year. The cheapest brand at the Moro trade store in 1997 was K2.20 per tin, so the replacement value of fish to the lake communities would be K362,870.59 per year. The resource is economically important to the lake people.

Second, a total of 2,143 crayfish and 1,259 fish were caught per day by the five villages, and approximately 2,118,460 crayfish and 1,244,285 fish were caught per year. This is an extremely large number and highlights the highly productive nature of the lake.

Third, the mean catch weight/person/day for all five villages was 121.2 g/day. This is much higher than that reported for a number of other Pacific Islands such as the Solomons (63–78 g/day), Tigak Island, PNG (24 g), West New Britain (11 g), and Western Samoa (27–69 g).

Fourth, a total of 19 species of fish and crustaceans were recorded in the catch. When the data for all villages was pooled, three of the species contributed 80 percent of the total catch weight: crayfish, or *Cherax papuanus* (35 percent); Adamson's grunter, or *Hephaestus adamsoni* (23 percent); and fimbriate gudgeon, or *Oxyeleotris fimbriata* (22 percent).

Fifth, fish were caught by a variety of methods, including more traditional methods such as poisoning with plant extracts such as *Derris*. However, pooled data for the five villages showed, in descending order, that hand lining (30 percent), mixed fishing using hand lines and catching crayfish by hand (24 percent), spearing (17 percent), and gill netting plus mixed gill netting (17 per-

cent) contributed most by weight. Gill netting gave the highest catch/unit effort (1085.6 g/hr), while hand lining gave the lowest (200.5 g/hr).

Sixth, a large proportion of the people (111, or 19 percent of the 5 villages) engaged daily in fishing activity, indicating its importance to the Foi. An estimated 370.3 person-hours/day were spent fishing in the five villages combined.

Seventh, females undertook the majority of fishing (53–85 percent of the effort, depending on the village). The average one-way distance traveled to a fishing ground was 891 meters, but ranged from 50 meters to 7,199 meters.

Eighth, for each village, the monitoring program identified a number of areas that appeared to be heavily fished (>10 percent of total catch weight) and that would require management attention.

Ninth, fish of all weights and lengths were captured; nothing seemed to be considered too small. Fish as light as 1 g and as short as 20 mm were included in the catch.

Tenth, gill-net mesh size ranged from 1" to 3.5". Fish had to run the gauntlet of being caught in a gill net at all stages of their life because of the wide range of mesh sizes being used.

4.4 Development of a Community-Based Management Strategy

WWF produced a large written report analyzing the catch monitoring data and made recommendations for fishery management strategies. In many cases, WWF presented a number of options. There were three main recommendations.

- Heavily fished areas should be closed for a period of time. Four options were discussed with communities—
  1) a two-to-three-year closure of heavily fished areas;
  2) closure of heavily fished areas every second year;
  3) closure of heavily fished areas during the wetter months (April–September); and
  4) a ban on use of gill nets in heavily fished areas during April–September.
- Small-mesh (<2.5"), 3" and 3.5" mesh nets should be exchanged for 2.5"-mesh gill nets. The exchange of nets would be subsidized by WWF.
- WWF would implement ongoing awareness activities encouraging the release of fish smaller than the palm of a hand (<10 cm).

The findings of the catch monitoring program and the recommendations were presented at community meetings. The community members who had been monitors acted as facilitators. Wherever possible, separate meetings were held for men and women to allow ample opportunity for women to participate in the development of fishery management strategies since they were doing so much of the fishing. Youth, particularly young girls, were encouraged to attend these workshops. Awareness/information/education sessions were also held at Inu community school since many of its children fished on weekends and school holidays. Particular emphasis was given to awareness regarding the release of fish smaller than 10 cm.

Pictorial leaflets in “pidgin” language were developed and distributed in villages and the community school to ensure ongoing awareness after the workshops or meetings concluded. Several topics were featured: the unique biodiversity of Lake Kutubu, a summary of monitoring results for each village, the proposed fishing management strategy, protection of small fish and fish of breeding size, the impact of logging and land-clearing around the lake, and the impact of dumping oil and soap and rubbish in or near the lake.

Communities then decided which recommendations they could and would like to implement. There was enthusiastic response to the gill-net exchange program, and numerous nets were exchanged. To prevent overfishing, communities opted for the strategy of closing heavily fished areas every second year. The areas to be closed were actually determined by clan leaders who owned the adjacent shoreline since customary land tenure extends ownership rights to adjoining lake water. Clan leaders consulted all members of the clan and agreed to close the area to fishing. The clan leader then notified the WMAC, which gave its imprimatur to the ban. WWF assisted the communities by providing signboards to declare that specified areas were closed to fishing. These illustrated signs were posted in the Foi language and in pidgin at various locations on the lake.

During 1997–1998, four villages created five no-fishing zones. People who violated the ban were taken to village court and fined. Communities and

village court magistrates have cooperated to enforce the restrictions because their purpose is widely understood and supported. In fact the response was so good that after the first year of closure, many new requests were made for sign boards to create new no-fishing zones and to extend the ban in existing areas about to reopen. Recently, seven villages closed nine additional zones, after clan leaders who had been participants and seen the results for themselves encouraged other leaders to join in. Fish stocks have increased in closed areas, and the word has spread.

It is too early to tell whether communities are releasing fish smaller than 10 cm. However, WWF continues to reinforce the awareness programs. Lake communities are now requesting that WWF provide technical assistance to set up fish-stock monitoring in closed areas before and after bans are imposed to evaluate changes. WWF is planning to provide training so that landowners can conduct visual timed-swim-transect counts of fish stocks in the closed areas.

Another spin-off of increased environmental awareness has been the growing interest in having Lake Kutubu listed as a RAMSAR wetland site in recognition of its biological wealth. The WMAC and local communities are working with Wetlands International to provide the documentation for listing. This is one of many signs of how the WMAC itself has been revitalized after a long period of inactivity following its creation. The WMAC has recently sent a funding proposal to the Southern Highlands provincial government to assist them in their work.

The Tugiri and Yo'obo communities have also been inspired by WWF awareness activities to develop a small ecotourism business on the lake. The two communities have jointly constructed a rustic lodge, and WWF is now providing technical assistance for future development of the lodge and a tourist trade. It is interesting to note that four of the key individuals involved in the enterprise also played key roles in fish monitoring at the two villages.

V. Analysis

5.1 Making the Program Accountable to the Community

Perhaps one of the key reasons for project success was that WWF did not approach the community with a rigidly predetermined goal. Rather it was expected that the project would evolve over time and that WWF and the lake communities would jointly develop the objectives. WWF's general purpose was to build environmental and sustainable resource management awareness in the lake communities and to strengthen the WMA. The sustainable management of fishery resources in Lake Kutubu was a common agenda that developed through a process of community awareness and analysis, and an assessment of where the interests of concerned communities and WWF overlapped. The communities wanted to be able to use fishery resources now and in the future, and WWF wanted to conserve the lake's unique biodiversity. These goals were compatible enough to develop an effective partnership to meet both aspirations.

It is important to note that the resource involved was of major significance to the community, and its management did not conflict with the community's desire for development. Unlike some resources, fish are exploited by all sectors of the community—from very young children to old men and women—so interest was high and general.

WWF's policies made it eager and willing to work with indigenous peoples, and the legal and extralegal climate of PNG made it difficult if not impossible to protect biodiversity without doing so. The question was one of finding suitable local partners among the indigenous stakeholders.

WWF carefully analyzed the local institutions and leadership structure on the lake in its search for the most effective partner. Although the WMAC technically should have fit the bill, the traditional clan leadership had more clout because they held customary tenure and were respected in the communities. WWF thus focused its attention on clan leaders without ignoring other players. WMAC members and less traditional leaders such as village magistrates and local councilors were kept informed and involved, not least because they would have roles to play in enforcing the no-fishing zones. As it

evolved, the project created the conditions for symbiotic relationships to form.

The dynamic worked this way: By closing an area, traditional clan leaders could proclaim and reinforce their customary tenure rights. The WMAC added a legal seal of approval by ratifying the closure, helping to protect traditional landowners from rival claims while gaining prestige within the community by association with its traditional leadership. The village magistrate and local councilors reinforced the management strategies by using their power to deal with violators, and simultaneously gained status in the lake villages by enforcing the community's will.

This last element was crucial. The process of identifying problems and needs and devising and implementing management strategies was a cooperative effort among the local communities. WWF played an important role in this. Although the communities had significant traditional knowledge about the lake's biological resources—knowledge that was incorporated into management strategies—they lacked the skills to objectively assess the overall characteristics and use of the fishery resources. WWF provided training to local community members in order to acquire information on the total fishery, monitor fish catches, and help communities make informed management decisions. This facilitated more effective collaboration with and among clan leaders, WMAC members, and village court magistrates.

Although WWF took the lead in analyzing fisheries data, it did not confront the community with rigid prescriptions for improved management. Assisted by the trained community members, WWF presented a series of options for the community to discuss, weigh, and modify so that final management strategies would have community support and fit the community's means to implement them. Indeed all initiative to implement final management strategies was left in the hands of local clan leaders and WMAC members. WWF merely responded to requests for assistance when required. In effect, WWF made itself accountable to the community.

5.2 A Balance Sheet of Community and Conservation Benefits

The conservation benefits of fish catch monitoring are clear, even though compliance is not universal. There has been an improvement in the sustainable management of fishery resources that will promote the long-term survival of the lake's unique fish species. As previously mentioned, clan leaders and landowners report a noticeable improvement in fish stocks in the areas that were closed for a year and then reopened. Areas closed between December 1996 and October 1998 show a remarkable increase in both the size and number of fish. These results have piqued the interest of other clan leaders, and requests are up for signboards to close off more areas.

The fisheries management project has also spurred interest in other ideas for environmental awareness and sustainable resource management by the Foi communities. The ecotourism lodge and preparation for RAMSAR listing of Lake Kutubu have already been cited. Now that it has gained the trust of local communities and proven that it is an effective partner, WWF hopes to remain on the cutting edge of this process and is helping to build local skills to keep the momentum going.

As a result of their participation in the fisheries project, a number of respected community members have now become serious advocates of conservation and sustainable resource management. Many of the directors of the Landowner Company starting the Tubo Lodge for ecotourism were trained as fish catch monitors and community workshop facilitators. It is also important to note that the local communities themselves are now requesting WWF training for local landowners to more effectively quantify the success of their management strategies. Because these technical skills are being internalized, the community is in a better position not only to monitor the status of fisheries but to make informed management decisions in general and to make them stick.

One sign of that is the revitalization of the WMAC. Not only is it taking on a more active role, but community pressure has built to replace members who have been ineffective. The fact that local clan leaders are now interested in joining the committee is an indication of its new importance. How effective the committee will become is yet to be determined. It remains to be seen if members can transcend their personal interests and collegially develop a genuine commitment to sustainable resource management.

Yet it would be unrealistic to expect an overnight transformation or one independent of change within the communities. WWF, for instance, has continuously involved women in awareness activities, discussion of fishery management strategies, and the monitoring program. Yet it was men who always made the final management strategy decisions even for activities that were mainly carried out by women. Ensuring that the women who do most of the work in exploiting a resource are given a voice in community decision making about how to conserve that resource is perhaps WWF's greatest challenge in all its work in the Kikori ICDP. The recruitment of local women to be outreach workers in WWF's Community Outreach Program may set a precedent for helping the Foi tap resources and a resourcefulness they did not know they had.

Still, there is no magic formula for predetermining what will work. When the first community meetings with the Foi were held, several community concerns were identified as possible priorities. One from the village of Gesege seemed, at first glance, to parallel the fisheries project. WWF decided to help develop a strategy for sustainable management of useful wild plants that villagers believed were growing scarce. The first step was to recruit two local men and two women facilitators and train them in basic participatory research and analysis. Data collection would focus on helping the community compile a useful plant dictionary and determine whether or not particular species were growing harder to find. Ninety-six species of the most commonly used plants were listed by their Foi names in a preliminary dictionary that described their uses as food, building materials, tools, implements, cordage, baskets, other woven articles, medicine, and magic. Specimens were also collected for herbarium identification of Latin names that would be added to the final draft. Despite this promising start, data about plant status proved to be ambiguous. Some interview respondents thought that certain species were less common while others were sure that nothing had changed. And when WWF convened a meeting to discuss the results, there was little interest in pursuing the management of any of these plants any further.

A number of suppositions can be made about why the community was less interested in developing sustainable management strategies for plants than for fish. First, fish are a far more important resource to the people of Gesege. Almost everyone in the community fishes, while many plants are used by only a few people. Second, there are more substitutes available for certain plant uses. Canoes and house posts, for example, are cut from a number of different species, none of which appear to have critically declined. As more people obtain cash income, there is a growing preference for permanent building materials such as corrugated iron roofing and planed timber. Although people can substitute tinned fish or meat for fresh fish, people generally express a preference for the latter. And finally, fishing is an enjoyable social activity, particularly for women who can often be seen with their canoes lined up next to each other so that talk is plentiful even when the fish are not. Collection of plant material is generally viewed as hard work, and not conducive to social exchange. For the moment at least this project idea is on hold.

This brings us back to the beginning. However promising a project idea seems, it is best to begin at an appropriate scale. Usually that means establishing a dialogue through participatory research. If you listen closely and make it clear that nothing will happen unless the community helps make it happen, people will quickly help you figure out whether the idea has a future or not.

VI. Conclusions

The territory and lives of indigenous peoples almost everywhere in Papua New Guinea coincide with ecosystems of high significance. This is particularly true of the Kikori River watershed where the ICDP is being implemented. Conservation groups in other parts of the world might try to circumvent local people and form top-down alliances with the state in an effort to expedite environmental initiatives. Customary land tenure in PNG requires conservation groups to work with indigenous peoples if they wish to do any meaningful work at all. Consequently, lessons are being learned here that may apply elsewhere when hidden opportunities are being overlooked because the balance of power does not require looking deeper. Working with the people who are the primary stakeholders in a place may be slower, but it also may be the best chance for an effective and

long-lasting partnership to conserve the land and its resources.

The challenge confronting WWF in PNG has been in forming an effective and meaningful partnership with indigenous communities. As this case study indicates, their goals and priorities often do not match those held by conservation groups. Partnership is not a given; it usually must be created. That involves a long process of dialogue and action to learn about one another, develop trust, and find where a mutuality of interests exists between conservation and development.

In the case of the sustainable management of subsistence fisheries in Lake Kutubu, the goals of the Foi and WWF overlapped to provide firm ground on which a partnership could be built almost immediately. In successfully carrying out the project, the communities began to appropriate for themselves certain conservation goals. The linkage of conservation to resources crucial to the community was vital to this process. Now that the notion has taken root, the lake communities are beginning to apply it in other initiatives. WWF supplied needed skills, knowledge, and resources to facilitate the process. In turn, the communities taught WWF much about this particular corner of the world that the Foi and their ancestors have tended for thousands of years.

Lessons that might be of use in building effective partnerships elsewhere include the following six points:

- Do not approach indigenous communities with predetermined goals and a rigid conservation agenda. Local priorities must be the starting point for a transparent dialogue about means and ends. The knowledge, skills, and culture of the indigenous group must be expressed if any project is to take root and flower. On its side, a conservation organization must be frank about dispelling unrealistic expectations about what it can deliver. Both parties can then search for areas where their goals are complementary or overlap, and build on them for broader conservation initiatives.
- Search for appropriate institutions with which to work. Do not limit this search to formally structured organizations such as the WMAC or village courts or local government officials. Traditional leadership structures are often more powerful and influential institutions and better reflect the voice of the community than formal organizations.
- Improve community capacity through meetings, workshops, and training that build awareness, skills, and knowledge needed to make informed resource management decisions. Involving the Foi in the collection and analysis of the data they needed to assess fish populations made it possible for the community to believe that they owned the project and could claim credit for the results. This increased capacity, in turn, has built a foundation for refining results and taking on new challenges in other areas.
- In engaging the community in dialogue, conservation organizations must make conscious efforts to recapture traditional knowledge and resource management skills and look for ways to supplement that knowledge with modern tools and techniques that the community can appropriate to achieve conservation goals. The values and practices of indigenous communities are the foundation for building lasting solutions. Without a strong sense of cultural identity, a community is unlikely to mobilize the broad support needed to form decisions and make them stick. Specific cultural forms may also be latent resources, waiting to be tapped in new ways. Beliefs among the Foi about forest spirits and ancestral obligations, for instance, may prove key to devising culture-based strategies for protecting the resource base for future generations.
- In reaching out to the community, conservation organizations also need to be more resourceful and creative in involving women, who after all are often the primary actors in subsistence activities.
- Finally, one must always be aware of the long-term, even when the step being taken is short-term and halting. This spotlights the importance of reaching out to the young as the fishery project did when it involved schoolchildren as well as their elders. It also means that youth should be

involved in the recovery of traditional knowledge and how it is connected to nature. The young are in danger of losing their link to their past, yet they may be in the best position to adapt their heritage to invent a habitable future. In this equation, the vitality of the culture and the vitality of the resource base may well rise or fall together.

Endnotes

1. I want to acknowledge the valuable comments and contribution made by Tanya Leary, the architect of the Fish Monitoring Program, and the Foi leaders of Tugiri, Wasame, K-Point, Yo'obo, and Gesege villages of Lake Kutubu.

2. Scientists originally identified only 10 endemic species. The monitoring project discovered that the Foi had names for two additional species that scientists had been lumping together with fish that looked similar. Double-checking proved the Foi to be correct.

3. K= kina, Papua New Guinea's currency. In 1995, one kina = U.S. 90 cents.

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CHAPTER 7

Environmental Governance: Lessons From the Ju/'hoan Bushmen in Northeastern Namibia

Barbara Wyckoff-Baird [1]

I. Introduction

Smoke hangs in the still air, pierced by sunlight slanting through the doorway of the training center's conference room. On one side sit leaders and community rangers from the Nyae Nyae Farmers Cooperative (NNFC), representing about 3,000 Ju/'hoan Bushmen living in northeastern Namibia. On the other side are staff of the Namibian Ministry of Environment and Tourism (MET). It is something of an accomplishment just to have both parties sitting quietly together in the same place. It is even more unusual that they are listening intently to the same thing.

Everyone has come to hear a wildlife biologist and a range management expert from Botswana who were hired by the NNFC to help draft a game management plan. The wildlife biologist is quite blunt. He says the Ju/'hoan are not using their wildlife sustainably. He suggests that the community curtail its hunting.

As the translator conveys this message, it sparks sharp comments in Ju/'hoansi, the local language. NNFC representatives direct these comments not at the biologist, but toward one another. Most of these men are old; many are expert hunters who have tracked on foot and used bows and arrows to bring down buffalo, giraffe, eland, kudu, and other animals. The Ju/'hoan people, who are also known as the !Kung and the Ju/Wasi, are no longer, strictly speaking, hunter-gatherers. They pursue a mixed economy, combining foraging and subsistence hunting with livestock production, small-scale dryland agriculture, craftwork, and wage labor. In the Nyae Nyae area they still exploit a wide variety of resources, including more than 120 species of edible plants and dozens of large and small mam-

mal species (Hitchcock 1992). Game populations have been used sustainably for centuries without conscious coordination of overall kills, so the management plan being put on the table by the wildlife biologist is an abstract concept with several difficult-to-grasp components.

The debate blazes for some time until finally a consensus emerges from the smoke. /Ui, one of the best hunters, expresses it this way: "The news is bad and good. Now we know how many animals it is safe to take. It may not be as many as we would want or as a hunt will bring, but we can be sure that some will be left for our children."

Even as this conclusion is being reached, minds are also being changed among the MET staff who watch silently on the other side of the table. For years tension has existed between the MET and the local community, and some government agents charged with protecting wildlife have thought of the Ju/'hoan as greedy children or even as predatory poachers. What they hear now begins to persuade them that these people (and *Ju/'hoan* can be translated as "the Real People") do not want to kill all their animals. Rather they share with MET a vision of a future that includes both people and wildlife. While no one thinks that all differences have vanished, it seems clear that the time has come to build a partnership. The community and the government need to act in tandem to preserve the natural resource base if local people and their cultural identity are to survive.

The outline for a wildlife management plan is agreed to. It has been developed through a participatory process that captures the Ju/'hoan's knowledge of their resources. It calls for wildlife monitoring; construction of game water points; live sale of buffalo, roan, and eland; development of tourism; reduced hunting by community members; and control of poaching by "outsiders." The NNFC will plan and implement some of the elements alone, but the harvest quotas will have to be negotiated with MET staff. The people of Nyae Nyae and the MET will also need to work together to stop poaching.

As the meeting winds down, staff from the MET and NNFC make plans for airing the various options with the community members who are not present. The community will have to weigh the benefits and costs of each choice and make some tradeoffs if the plan is to be enforceable. The Ju/'hoan will have to establish rules and sanctions governing resource use and develop mechanisms for monitoring compliance. The NNFC's board, and the community rangers who will be on the front line of implementing the plan, are prepared to discuss these issues, and have the authority and confidence to do so.

That meeting took place in 1997, when a new government policy to establish game conservancies managed by local communities was taking shape. There were doubters on both sides about what this policy really meant and whether it could work. This case study describes how the Ju/'hoan community and the government found common ground, and how an outside broker—the Living in a Finite Environment (LIFE) Program, established by the government, comanaged by World Wildlife Fund–US, and funded by USAID—facilitated the process. What is special about this story is not the idea, which has been tried elsewhere in Africa with mixed results, but the effectiveness of the community response. This study will detail what that involved and what steps an outside organization like WWF can take to support community-based efforts.

As will become clear, such support is crucial. The Ju/'hoan experience shows that when governments devolve resource management rights, benefits, and responsibilities to local levels, the indigenous community must build new partnerships with the public and private sectors and often with international donors to make the devolution work. The community must be able to clearly state its agenda and find mutually shared objectives with other actors. Developing the confidence, information, and skills necessary to be a partner in joint decision making is an institutional challenge, particularly for most hunter-gatherer societies that rely on consensus rather than formally established hierarchies of authority. Old institutions will find their effectiveness tested, and newly created institutions will find their legitimacy questioned. The indigenous community must ensure that its institutions function both locally and within these new alliances by adapting rather than scrapping existing social organizations and cultural values. At the same time, the government agencies involved are also likely to be breaking new ground and in need of advice and

support. The LIFE Program played a key role in capacity building by helping open lines of communication within the community and between the community and the government.

As the case study unfolds, lessons will emerge that others can apply to similar projects elsewhere. This does not mean that what happened in Nyae Nyae can be replicated literally, as if it were a master blueprint for game management by indigenous peoples. Historical and cultural contexts, environmental conditions, national policies and legal systems, the mix of actors, and available resources vary too widely for that.

Above all, indigenous communities are not all alike. Nyae Nyae provides an environment in which the conservancy idea may flourish. First, the Ju/'hoan Bushmen are effective managers of their natural resources. They know those resources intimately, understand the past and present ecological contexts in which the resources exist, and have developed social systems to manage them. At current population levels the Ju/'hoan lifestyle is consistent with an increase of wildlife in the area. The success of hunting as a livelihood, in fact, depends on increased game supply. Unlike more sedentary agriculturists, the Ju/'hoan see wildlife not as a threat but as a necessary element in their environment.

The Ju/'hoan community is also relatively small and homogenous. Conflicts exist, primarily between age groups and between members of different *n!oresi* (the places to which people belong), as well as with individuals seeking personal gain; yet common goals, beliefs, and values prevail. The community has maintained its cultural identity despite the rapid changes brought on by engaging in the political and economic life of the nation state.

To better understand what is happening in Nyae Nyae, this case study will proceed in three stages. First, the environmental, cultural, and legal context for game management will be examined. This will be followed by a discussion of how the idea evolved and took hold within the community and the problems and opportunities that have followed. Then lessons that have broader application will be highlighted. These lessons fall into three broad categories: the necessity for an enabling policy environment and the limitations of this particular system; steps to take in strengthening local institutions; and ingredients for effective partnerships, and the roles of external facilitators.

II. An Overview

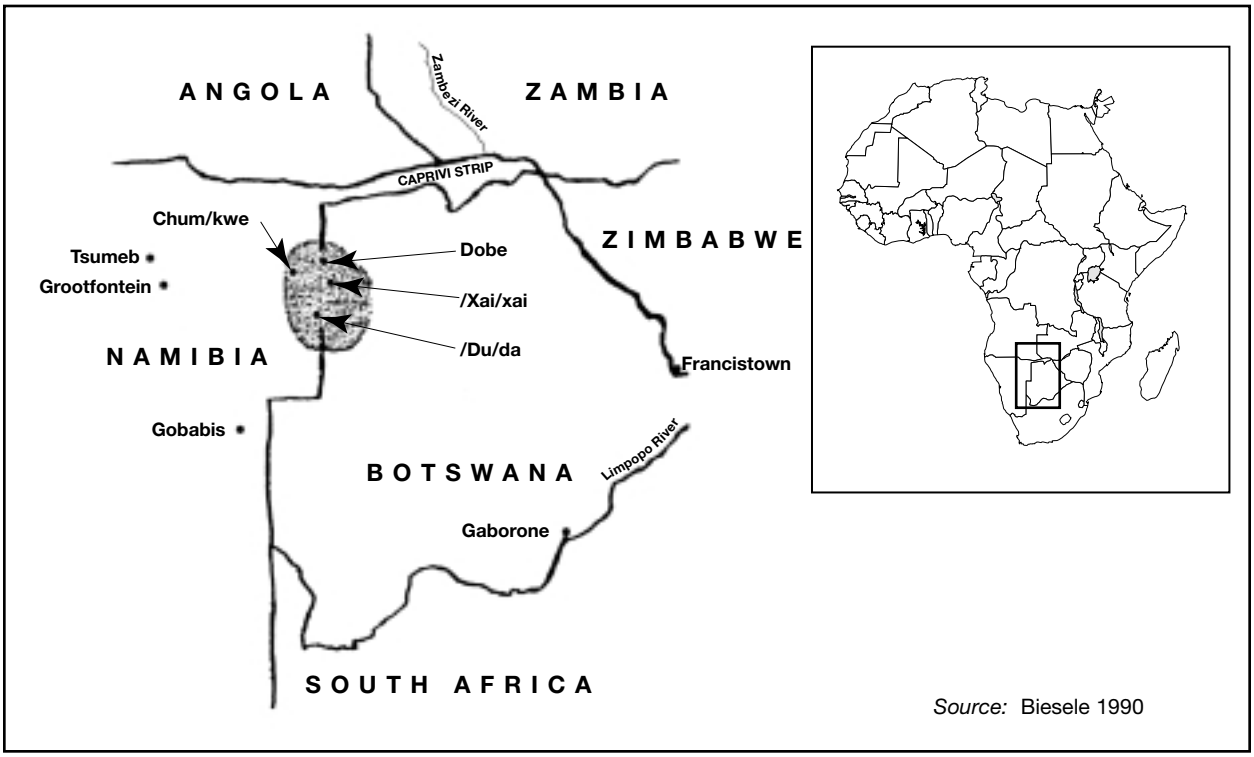
2.1 Land and Ecology

The Ju/'hoan once lived on a vast tract of land that encompassed parts of Namibia and Botswana, mainly in what is now known as the Kalahari Desert (see map 7.1). The "Real People" were able to collect food and hunt game over wide-ranging areas (Marshall 1976). Construction of a fence along the border between Botswana and Namibia blocked migration routes for game and divided the Ju/'hoan, who lost territory. The Nyae Nyae area is now about 9,000 square kilometers (3,240 square miles) of mostly semiarid tree-shrub savanna. Rainfall averages 300–500 millimeters per year but varies greatly in both time and space. The mixture of clay pans and nonporous calcrete creates a system of seasonal pans and wetlands unique in the Kalahari area. In years of good rainfall, the pans and the large areas of calcrete fill with water in summer and attract large numbers of water and wading birds, including flamingos and pelicans. Endangered wattled cranes, snipe, the rare slaty egret, and many migrants from Europe are found when the pans are full (Jones 1996a).

Vegetation is characterized by mixed broadleaf and acacia woodland where the dominant species include several types of combretum and the weeping wattle (*Peltophorum africanum*). Other species are baobab (*Adansonia digitata*), tamboti (*Spirostachys africana*), marula (*Sclerocarya caffra*), and mangetti (*Ricinodendron rautanenii*).

The area is home to a number of rare or endangered animals. There is still a sizeable population of most antelope species, as well as elephants. All six of the continent's predators and scavengers live in Nyae Nyae, which stands out as one of the last two refuges in Namibia for the wild dog, one of Africa's most endangered mammals. There is a remnant herd of buffalo that was cut off from its migration route to the Okavango Delta by the Botswana border fence. Government officials have caught and quarantined this herd because of veterinary regulations. While the vegetation in Nyae Nyae is ecologically balanced, game resources are depleted and unbalanced.

Map 7.1 The Ju/'hoansi's Ancestral Territory (shaded area)



Source: Biesele 1990

Populations of buffalo, roan antelope, lion, giraffe, and other species are low, while those of elephant, hyena, and leopard are high.

The nearby Khaudum Game Reserve, a wilderness area of 3,841 square kilometers (1,380 square miles), is a central element of the ecosystem. With no fence between the park and surrounding land, animals—including lion and elephant—leave the reserve in the winter in search of food and water. Now that the Ju/'hoan keep livestock, they are no longer tolerant of lions; and elephants, too, have become enemies, destroying crops and water points. Veterinary fences in the south and west, and the border fence with Botswana in the east, have significantly reduced the area over which wildlife can roam. Animals such as elands and giraffes have died after finding their migration routes barred.

2.2 People and Culture

In 1970 the colonial government of South Africa divided Namibia into several regions, reserving the more productive areas for whites and designating less productive areas as homelands for black Africans. The Ju/'hoan lost 40,000 square kilometers of ancestral territory to other ethnic groups, and the government designated another portion to the aforementioned Khaudum Game Reserve. The remaining land became Bushmanland, an ethnic homeland for the Ju/'hoan, and the "Real People" were left with only 14 percent of the territory they held prior to 1950, and only one permanent water hole.

As part of this process, many Ju/'hoan moved to the small administrative center of Tsumkwe, which had a school, a clinic, a few jobs, a jail, and a liquor store. The Ju/'hoan social system nearly collapsed. Many families became dependent on a few people working for the administration or the South African army. Alcoholism, disease, malnutrition, prostitution, and a high rate of infant mortality became widespread. By the late 1970s, Tsumkwe was a rural slum. The Ju/'hoan referred to it as "the place of death" (Biesele 1990).

The South African Bantu administration and then the Department of Governmental Affairs governed the Nyae Nyae area until independence in 1990, when the homelands formally ceased to exist. In fact, however, these areas are still

inhabited predominately by tribal peoples like the Ju/'hoan who practice "communal" rather than private ownership. The Nyae Nyae area extends through what is currently known as the Tsumkwe District of the eastern Otjozondjupa Region. Throughout the changing administrative structures of the past two decades, an authority of central government responsible for wildlife management has been based in Tsumkwe, and MET maintains a significant presence and some decision-making authority there today.

Traditionally the Ju/'hoan are organized as bands of individuals centered on and supported by the resources of a *n!ore* (singular form of *n!oresi*). During the 1980s some Ju/'hoan began a "back to the land" movement, leaving Tsumkwe to return to their n!oresi to reestablish occupancy rights. Today there are about 32 decentralized communities in Nyae Nyae, each with a water source (usually a well with a windmill), corrals for protecting small herds of cattle, and small agricultural fields/gardens. The communities range in size from a dozen to 150 people.

An extended family group is headed by a n!ore *kxao* (plural—*kxaosi*), or "steward of shared resources" that include water, small game, and wild foods. Group members select the n!ore kxao, either a man or a woman, from among their elders. The Ju/'hoan see some resources as "common" beyond family, in which case two or more n!oresi kxaosi jointly undertake decision making (see figure 7.1). All game and natural water points are deemed common property, as are some wild foods, including mangetti nuts, marula nuts, and morama beans (=Oma and /Aice 1996). N!ore kxaosi have been known to jointly agree to a moratorium on certain species within their hunting grounds to avoid depletion.

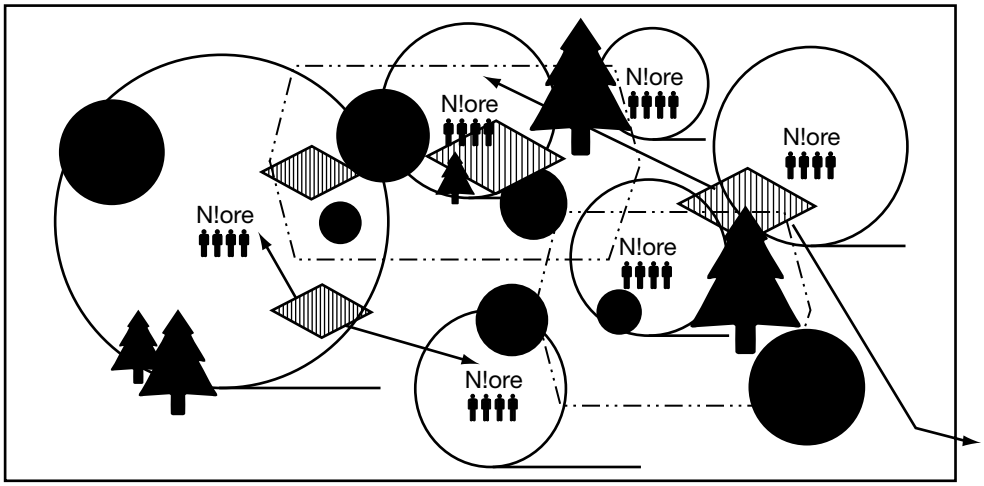
The Ju/'hoan culture of equality and tolerance has always favored decision making by consensus rather than by individual leaders. When such leaders do arise, their authority stems from how well they uphold the values of the society. Leadership is based on experience and wisdom, and leaders are generally older community members. Historically, men and women have had equal stature since gathering tasks were as critical as hunting was to group survival. As the Ju/'hoan became more integrated into the larger economy with the introduction of cattle and agricultural crops, women have lost some prestige and their social position has changed.

The traditional egalitarianism and tolerance inherent in Ju/'hoan values tends to prevent a concentration of power. As in many other hunter-gatherer societies, there is a lack of hierarchical structure for decision making. Even the idea of representation—one person speaking for another—is unfamiliar, though less so among younger, more educated members of the community. As one person stated, "Each of us is a headman over himself" (Lee 1993). This makes it difficult for the Ju/'hoan to exercise their rights within the governmental framework of the country. The Traditional Authorities Act of 1996 provides for one "traditional leader" and one to three councilors, based on population, to represent a community at the central government level. The Ju/'hoan have no single individual to represent them in this way.

A key feature of the past 15 years has been the slow emergence of legitimate and effective organizational structures among the Ju/'hoan to deal with the outside world (see figure 7.2). The Ju/Wa Farmers Union was started in 1986 as the back-to-the-land movement gathered steam. By late 1988, with the number of n!oresi increasing rapidly and with a growing need to facilitate applications for legal recognition in the soon-to-be-independent Namibia, awareness grew that the organization needed to formalize and institutionalize its structure and leadership. The union drafted a set of statutes to establish a representative organization governed by a council. Each n!ore would choose a male and a female representative to sit on the Representative Council, which would select individuals to communicate with outsiders and would meet at least every six months to provide feedback to and from the community.

The Ju/Wa Farmers Union further tightened its structure and became the NNFC in 1990 when a development program took shape with funding from international donors and support from a Namibian nongovernmental organization (NGO). Members of the NNFC Representative Council elected a chairperson, a secretary, and one representative from each of the three districts of Nyae Nyae to form a management committee and supervise day-to-day program services. Megan

Figure 7.1 Common Property Resources in Nyae Nyae



Wildlife: may be resident or migratory

Hunting Area: always shared between more than one N!ore

Wildlife movements

Veld Food Gathering Area: Including tubers, roots, berries, etc.

Indigenous Fruit Tree Area: may be an individual tree or grove

A **N!ore** is roughly equal to a village or farm.

Rights to live in or use the resources of a N!ore are inherited at birth or gained through marriage.

N!oresi resources are managed by **a N!ore Kxao or "owner"** who makes desisions in consultation with the other residents of his or her N!ore.

Resource areas can be "owned" by one N!ore or they may be shared between several.

Rights to use the resources owned by another N!ore may be shared, but only when permission is given by the N!ore Kxao. Hunting or gathering without permission is considered "stealing," and was traditionally punishable by death.

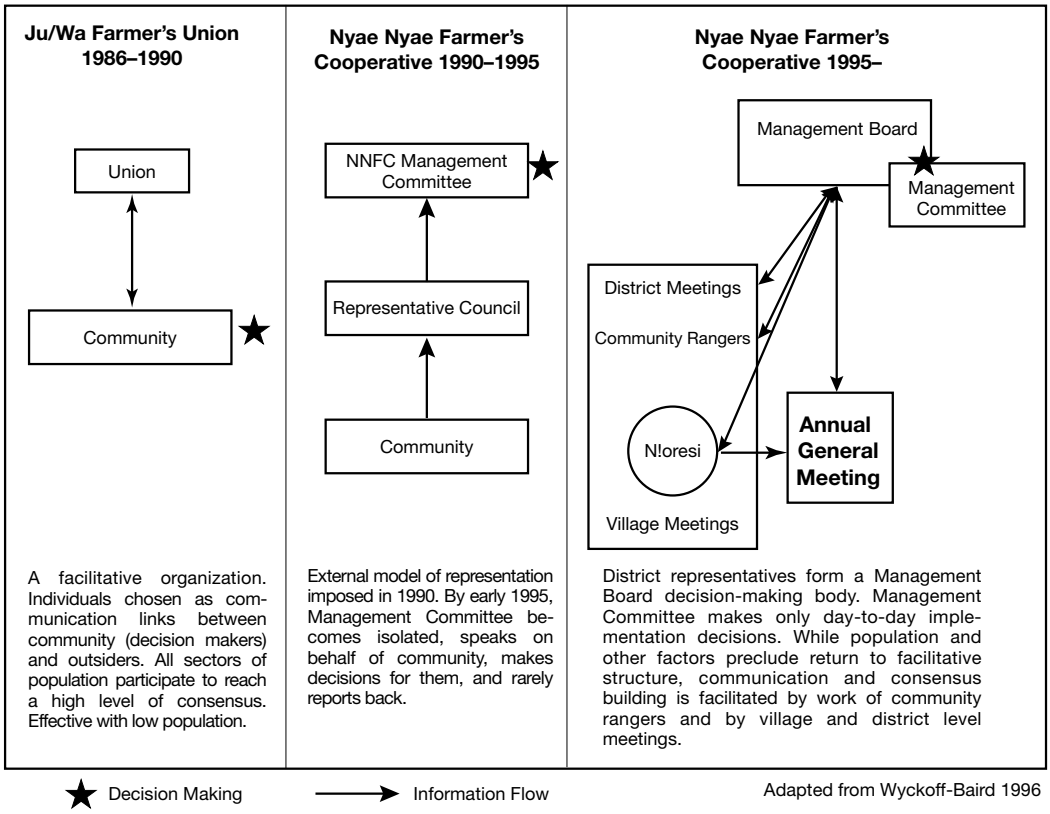
Adapted from =Oma and /Aice 1996

Biesele (1994), an anthropologist and longtime colleague of the NNFC, describes this period as "the application of an international stereotype of leadership and community management in…a long and subtle process." The new structures were essentially imported models created to meet expectations that did not originate locally. Wyckoff-Baird (1996) adds, "The early approach focused on the products of democratization (i.e., creating representative institutions) rather than on the process of democratization (i.e., indigenous people defining and achieving their own appropriate models)." The project to establish and run a conservancy with the assistance of the LIFE Program eventually helped to narrow this gap.

2.3 Conservancy and Tenure

The indigenous people of Nyae Nyae have fought long for recognition of their traditional tenure system. Several factors have complicated the battle since national independence. Until recently there was no national legislation detailing communal land and resource rights. The Namibian Constitution recognizes some land rights by infer-

Figure 7.2 Evolution of Decision-making Structures in Nyae Nyae



Adapted from Wyckoff-Baird 1996

ence, stating that "any Namibian has the right to move anywhere in Namibia, but must gain permission from the traditional authority in the area." Given the lack of easily identifiable hierarchical decision-making structures among the Ju/'hoan, it is difficult to implement even this provision and most outsiders ignore it. The lack of effective political representation hampers the Ju/'hoan's ability to win redress from the state.

Sometimes the challenge to tenure is considerable. Since independence, more than 5,000 Hereros, descendants of those who fled German colonial authority in the early 1900s, have been repatriated, with 40,000 head of cattle, from Botswana to Namibia just south of Nyae Nyae. The grasslands there are inferior, especially compared to those of the Ju/'hoan, who have much smaller herds. Ignoring the fence separating the two areas, the Herero began moving their cattle north in 1995. The resulting damage to wildlife was significant (Stuart-Hill and Perkins 1997), and the Ju/'hoan at first seemed powerless to protect their livelihoods.

It is not surprising, then, that the Ju/'hoan were willing to listen to MET staff who came to Nyae Nyae at about that time touting a new policy that promised local people rights to wildlife. In Namibia the state owns all protected and endangered wildlife, but a private landowner owns the huntable game and can petition MET for a harvest quota for protected and endangered species living on the property. This quota is generally the number of animals that can be removed without negatively affecting species sustainability. In 1995 the government enacted a policy for Wildlife Management, Utilization, and Tourism in Communal Areas to promote community-based natural resource management, which was codified the following year in the 1996 Amendment to the Nature Conservation Act. This act extends some private landowner rights to communal landowners by setting up procedures to establish conservancies. When government certifies that conditions have been met, a conservancy is established that gives the community conditional and limited rights to wildlife on communal land. The use of harvest quotas lets the

local resource manager see clear linkages between costs and benefits: As farmers manage resources more intensively to increase population numbers, they receive the benefit of higher quotas. These quotas generally translate into financial returns through live sale, tourism, and trophy hunting. It is assumed that these benefits will be incentives to use natural resources sustainably, thereby helping to improve conservation of biodiversity and habitats outside of protected areas like the Khaudum Game Reserve.

Although Namibia now has strong legislation for community wildlife management, it does not directly address the greatest threat to the Ju/'hoan, the lack of secure tenure over their land and other resources. In the case of the challenge posed by the Herero cattle herds, the partnership between the NNFC and MET to establish a conservancy may have influenced the government's decision in June 1997 to order the Herero to leave Nyae Nyae. However the growing pressure being brought to bear by Bushmen both inside and outside the country for tenure rights may also have played a role.[2] At any rate, by the end of 1997 all but one Herero family had complied.

III. The Evolution of Community-based Natural Resource Management in Nyae Nyae

The story of how a partnership formed to bring effective community-based natural resource management to Nyae Nyae is complicated. It extends over nearly a decade and involves an extensive cast of actors (see figure 7.3). The story proceeds in three phases: impasse and the search for new approaches; revamping community institutions to take ownership of the project; and negotiating with outsiders to create a conservancy. Because there are so many diverse threads to this story, these phases contain areas of overlap. Like snapshots taken at three intervals, they show the growth and capacity of community organization among the Ju/'hoan as they struggle to become effective stakeholders in managing the land they live on.

3.1 Institutional Gridlock and a New LIFE (1990–1995)

To a great extent, what is happening in Namibia today would not have been possible without fundamental policy changes at the national level. MET did not begin with a blank slate. It inherited field staff, policies, and a history of conflict with communities from its colonial predecessor, the Department of Nature Conservation (DNC). Charged with managing wildlife throughout the country, the DNC concentrated on a system of parks and game reserves and limited its rural outreach activities to law enforcement, the control of problem animals (predators killing livestock and elephants destroying crops), and ad hoc environmental awareness-building. In Nyae Nyae, most of the effort went into building up the infrastructure of the Khaudum Game Reserve and restricting its use by local people. Water points were constructed to encourage game to enter the reserve, and DNC staff patrolled to control poaching by local people. They had the authority to enter people's homes to apprehend suspects and to build campsites on community land for use by government staff. Many such activities were carried out without consulting local residents or n!ore leaders.

Following independence, the DNC was replaced by MET. The pace of change since 1990 has been rapid, as the new ministry has increasingly focused on the development of ideas and practices that link conservation with development to improve the quality of life for all Namibians. In 1991, MET began reaching out to local NGOs to conduct socio-ecological surveys of local views about resource management to identify problems and solutions. The survey in Nyae Nyae was the beginning of a different kind of relationship between the agency and the community. While it did not result in joint planning and implementation of wildlife management, it legitimized face-to-face contacts and began a dialogue that might one day make those outcomes possible.

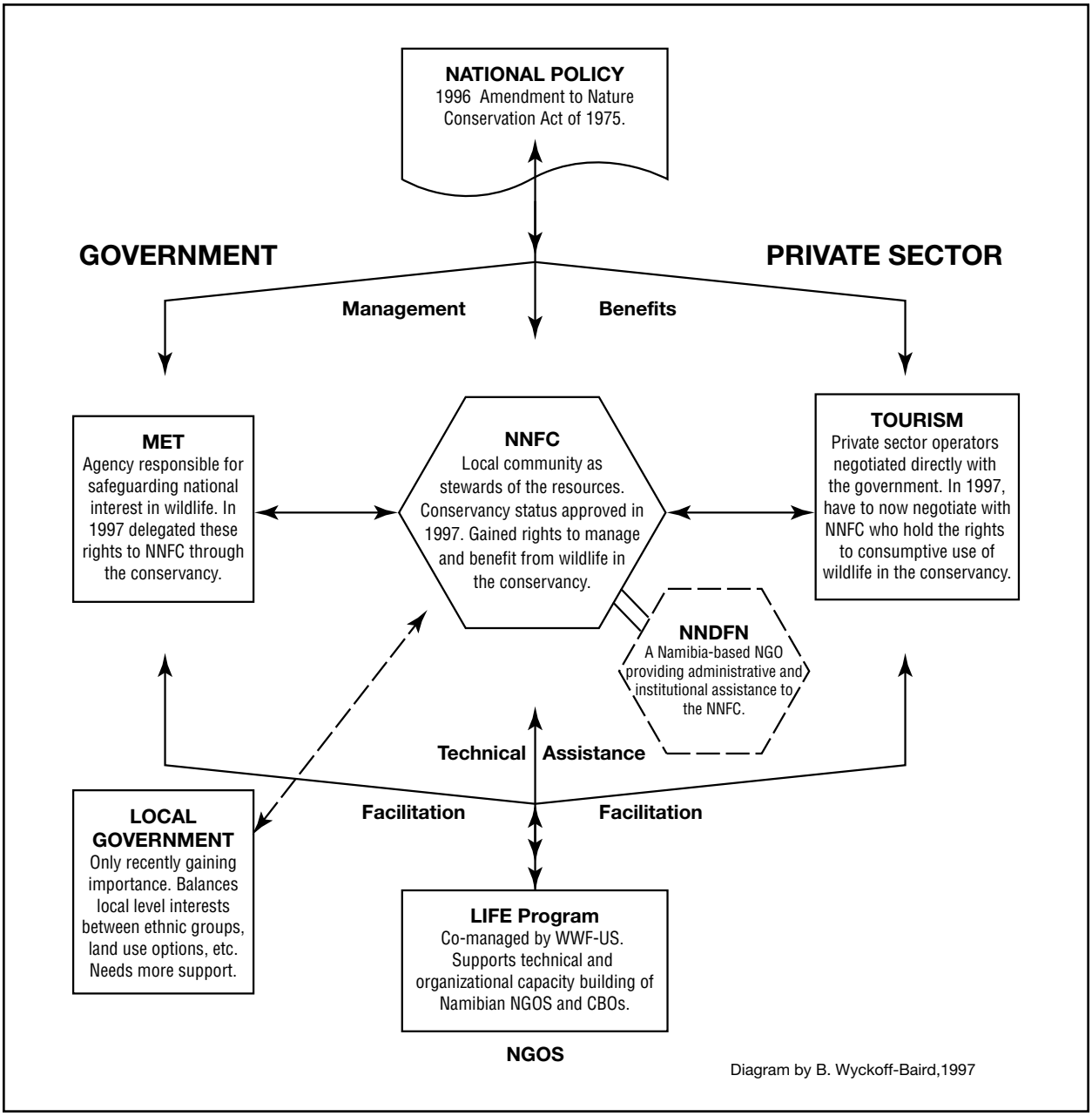
At the time, of course, one could not tell what direction was being followed. Certainly MET delivered confusing and contradictory messages to the people of Nyae Nyae. Those messages reflected deep conflicts within the ministry between those who thought nature had to be protected from local people and those who wanted to find a new way. One day representatives from MET would arrive bringing promises of local control over and benefit from the community's wildlife, while the next day another set of staff would install pumps at water points for game

near villages without consulting anyone. Feeling pressure from NGOs and donors to work with local communities, senior MET officials in Windhoek, the national capital, made promises to local residents, but seemingly without telling field staff. Despite assurances that the practice of raiding people's homes would stop, for instance, arrests continued, and MET began to seem no different than the DNC.

Trust was further undermined by the reluctance of local MET agents to expedite poaching cases reported by the Ju/'hoan. Even though the community was aware of exceptional individuals, the agency quickly earned a reputation for being dishonest and incompetent. Partnership did not seem to be on anyone's mind.

After this halting start, which was not confined to Nyae Nyae, MET recognized that both the government and local NGOs lacked the financial resources, skills, and staff to work effectively with local communities. So in 1993 the ministry established the Living in a Finite Environment

Figure 7.3 Wildlife Management in Nyae Nyae: Institutional Map, 1997



(LIFE) Program. This program, comanaged by WWF–US, would provide grants, training, and administrative and technical assistance to local NGOs and community-based organizations (CBOs). Its goals were to develop or strengthen representational decision-making bodies; expand skills in resource management and planning, as well as project development, implementation, and monitoring; increase economic benefits from resource use by promoting community-based tourism and other enterprises; and increase access to knowledge and information on which to base decisions. The LIFE Program would also act as a "buffer" between the local organizations and USAID, the primary donor, by absorbing some administrative, reporting, and financial management requirements. Both MET and WWF–US also pledged financial resources to the program.

In January 1994 LIFE made its first grant in the Nyae Nyae area to the Nyae Nyae Development Foundation of Namibia (NNDFN), an NGO that was formed in the 1980s to aid Ju/'hoan efforts at self-reliance and to support the back-to-the-land movement. From early efforts to dig wells and supply them with pumps to build cattle herding in the n!oresi, the NNDFN expanded its support until by 1994 it included an integrated development program of education, preventive health care, agriculture, income generation, and natural resource management.

The LIFE grant was provisional for six months, while an effort was undertaken to see what the community wanted to do. In July the Nyae Nyae Farmers Cooperative (NNFC) council met and asked the NGO to scale back its staff support and delegate more authority to the community. A new institution—community rangers—was established, and 10 young men were selected at district meetings to monitor game movements and keep people informed about what was happening in the development program. In August, the LIFE advisor and representatives of MET and the NNDFN came to Nyae Nyae to assess the situation.

The LIFE Program decided to work directly with the NNFC. Realizing that community-based organizations face the dual task of identifying their priorities and developing the capacity to meet them, the LIFE Program is designed to provide CBOs with more proactive technical assistance than a professionally staffed development NGO would receive. In this case, several things were immediately apparent from discussions with community members. The NNFC, despite the lofty aims of its creators, was alienated from the people it was supposed to represent.[3] The Representative Council did not communicate effectively with its constituents and made only superficial decisions. Several community members would buttress this opinion in coming months by saying that their nominal representative to the council was not in fact chosen. Several n!oresi kxaosi reported that someone different attended almost every meeting. As one council member explained the selection process, "Whoever is in the n!ore when the truck arrives, jumps on and goes to the meeting."

The gap between the community and the Management Committee, the small group of five men selected by the council to run things day to day, was even wider. The committee made decisions on behalf of local residents but rarely communicated the results. It rarely consulted the community about how planning and implementation of the development program could be improved. Visits by committee members to the n!oresi had practically ceased. Most community members were unaware of what the committee was doing, and felt that the people on it should be replaced.

Ironically the new "representational" system had increased stratification within the community. Many NNFC leaders were young men who had received an education. They felt comfortable around outsiders and were confident in expressing themselves as individuals. Lacking the attributes required by the new structure, older community members became marginalized. Women also lost much of their right to participate in decision making since they generally did not attend school, did not have needed language skills, and knew little about other cultures because they were shielded from extensive interactions with outsiders.

While it was clear that the current structure was ineffective, it was unclear what should develop in its place. The Ju/'hoan wanted to engage in the national political process and eventually with the wider global society. They needed an organization that government would consider legitimate and representative in the new Namibian democ-

racy. At the same time, the LIFE advisor knew that experience in many community development efforts had shown that building on existing structures is more effective than creating new ones (Brown and Wyckoff-Baird 1992). The Ju/'hoan could not afford to forfeit their indigenous values and culture, and they did not wish to do so. The challenge was to find out how the indigenous social organization could accommodate itself to a new political process that required streamlined decision making to be effective.

The LIFE technical advisor for community-based natural resource management (CBNRM) helped the community draft an action proposal, and the NNFC received its first direct grant from LIFE in September 1994. During the next 21 months, the technical advisor visited Nyae Nyae almost one week per month, working closely with other staff the NNFC hired. It was agreed that the NNFC and the advisor would jointly set objectives for each visit. A primary goal would be to facilitate independent assessments of activities and provide feedback to the community. A process would be designed to help the community identify its own needs and priorities, and begin to develop its own solutions. A wildlife management committee (the NNWMC) was also established that brought together NNFC leaders and community rangers with MET staff to build trust, reduce suspicions, and discuss how community-based natural resource management might be undertaken.

How that proposal fared will be the subject of the next two sections. But to understand what eventually happened, it is first necessary to take a step back and see how LIFE was interacting at the national policy level with MET to make community ownership of natural resource management viable. The idea of establishing conservancies had gained a foothold within MET. Although it was not directly involved in drafting policy or the political process of changing it, the LIFE Program supported the idea of conservancies and helped provide outreach, materials development, and training to identify what was needed to make it work. LIFE Program funds supported the University of Namibia in undertaking a broad review of legislation that influenced wildlife management and conservancies. LIFE staff also worked with MET personnel and the staffs of partner NGOs, such as the Legal Assistance Center, to help develop an NGO position paper on land reform as part of a national government consultation process. LIFE also supported training for CBNRM in the MET, led by the Rossing Foundation, a local NGO.

By 1995 MET's leadership was convinced, and it adopted a new working policy to prepare the way for development of conservancies. In 1996 Parliament passed conservancy legislation that contained an unusual idea. It would allow local people to develop their own wildlife management bodies, rather than mandating how they should be organized and work. The stage was set for the community of Nyae Nyae to speak and act on its own behalf.

3.2 Building Institutional Capacity and Mobilizing Community Resources (1994–1996)

Although Nyae Nyae wanted to take the stage on its own behalf, it would take time to be able to do so. As the last section indicated, the NNDFN handed over most of its responsibilities to the NNFC in mid-1994. While the NGO would continue to provide administrative and institutional support, the CBO for the first time would control the program and budget. If the transfer of power was to be real, however, the NNFC had to be revamped. To be effective it could not simply claim to speak for the community, it had to find ways to let the community's voice be heard and heeded. New structures had to be devised that met a fourfold agenda. An effective community organization must 1) communicate with its members and involve all groups in decision making, 2) reconcile internal differences and individual interests, 3) articulate views and positions effectively with external stakeholders, and 4) be recognized as legitimate by both community members and outsiders (Murphree 1994). The new structures would also need to build upon the community's cultural values, beliefs, and social organization if they were going to have some chance of success (Larson et. al. 1998). Given the Ju/'hoan culture, decision making would have to be by consensus, with no individuals accruing undue power or authority. The structures would need to facilitate informed and direct decision making by the community, and men and women of all age groups would need to be involved.

To help the community develop such structures, the NNDFN and LIFE worked together during

the early months of the community grant to devise a process of self-analysis and strategic planning. That led to an internal review conducted by a group comprising the NNFC's managing committee, 10 senior representatives from the council, and 11 other community members. As a critical first step, the LIFE technical advisor, acting as a "neutral" observer, independently conducted interviews in the community to assess support for the NNFC. The review group then identified the key issues and possible solutions. They discussed traditional decision making; the characteristics a modern institution had to have to be seen as legitimate in the eyes of the larger society and government; issues of representation, specifically gender and age; and the different roles of leadership. Meetings held over six months allowed community members time to debate these issues among themselves and with the n!oresi kxaosi. Including community members in frank and meaningful dialogue and joint decision making incorporated local knowledge and values into the design of more appropriate structures. This process worked so well that it eventually became an annual event, with the LIFE advisor providing an independent audit of institutional performance and the NNFC deciding what adjustments could be made to build broader participation.

As a result of the first review process, the NNFC decided in March 1995 to create a Board of Management to oversee the management committee and make it more responsive to the community. Two representatives were elected from each of the four districts in Nyae Nyae to join officers of the existing management committee and form a board of 13 members. The community selected new members on the basis of traditional leadership values rather than modern skills. Wisdom, experience, and how well a person upheld the values of the society outweighed literacy and the ability to communicate with outsiders, and resulted in the election of community elders, including some n!oresi kxaosi. Although young men from the original management committee remained on the new board, power had effectively shifted back to the elders. During this period, the NNFC also hired an institutional consultant to provide board members with training and support in staff management, strategic planning, proposal writing, work plan development, leadership, and financial management.

The board scheduled bimonthly meetings to review how the development program of the NNFC was being handled, to set policies, and to plan for the short and long terms. During the intervening month, board members would hold community meetings in their respective districts to gather and share information. The board had the authority to make decisions, and it was the primary mediator between community members and NNFC operating officials and outsiders (i.e., state agencies, donors, and NGOs).

To further insure that the new board did not become alienated from the membership, special attention was paid to the community rangers. The new board met with the rangers in mid-1995 to clarify roles and establish accountability. The rangers' primary role was to create feedback loops that facilitated the free flow of information within NNFC so the board could assess the impact of its actions and gauge community sentiment and the community could participate in decision making. Rangers were asked to make monthly reports to the board about education, health, and water in their districts—all of the development issues facing the community. During the following month, rangers would report back to the n!oresi in their districts about decisions made at the board meeting, provide updates on visitors to the area, and disseminate information on relevant legislative changes in Namibia. To insure the accuracy of information, rangers were insulated from conflicts of interest by abstaining from any decision-making or representative role. According to one community member, "A community ranger is not an individual, but all the inhabitants of the district." In effect, the eyes, ears, and consciences of local people are opened to him, and he becomes "the link that broadens community consciousness to NNFC ... levels" (Powell 1995). The rangers also collect information about the land and environment—including data on animal populations, grazing areas, bush foods, and plants—that would otherwise be scattered among the n!oresi. The NNFC hired a natural resource advisor in 1995 to train and supervise community rangers in data collection techniques and analysis. These skills proved crucial as the proposal for

establishing a conservancy surfaced and the rangers' role grew.

In mid-1995, the new Nyae Nyae Wildlife Management Committee held its second meeting, bringing together MET staff, NNFC representatives, and the community rangers. MET/LIFE began to work with the community rangers in a participatory mapping process that would allow local people to visualize their resource base, articulate the names of landmarks in the native language, and gather knowledge that had been scattered among individuals and across n!oresi. This process had several beneficial results. It allowed MET and the community to develop a common language to discuss wildlife management and other issues. MET began to see how much information the community had to contribute; perhaps even more important, the community developed greater self-confidence as it realized the same thing. Finally, a new set of tools was being developed and put at the community's disposal. In the years ahead, new training programs would build on the concepts involved. Project maps would be drawn that used flow diagrams and problem trees and allowed the board and the rangers to plan and target research in a variety of programmatic areas. These "maps," too, would have a double-sided benefit. They would bolster the confidence and authority of the people who made them, and they would prove to be valuable in communicating community interests to outside actors.

By the end of the year, MET policy was crystallizing around the idea of conservancies, and the idea was being discussed in Nyae Nyae. The LIFE advisor acted as a facilitator in these discussions and in the conservancy planning process that followed. Facilitation can be defined as "remov[ing] the impediments to opportunities for people to learn from themselves and to speak for themselves" (Murphree 1996). One of the principal impediments is lack of access to information, and opening the flow was the first step that had to be taken. In collaboration with the community rangers and the NNFC's natural resources advisor, the LIFE technical advisor visited a number of villages, attended district meetings, and spoke to the NNFC leadership about the conservancy concept and requirements. The technical advisor also held sessions for the NNFC leadership to prepare them to brief the community about a conservancy.

In early 1996 a conservancy workshop and district meetings, attended by 15 percent of adults and all the n!ore kxaosi, were held. This coincided with completion of the second annual performance survey of NNFC. All these showed that there was significant support in the community for the management board, but that the process of institutional transformation was not yet complete. A survey of randomly selected community members indicated that everyone had heard about the efforts to plan for wildlife management. Although the depth of understanding varied, this was a marked improvement over results from the previous year. It was also clear that the multiple lines of communication that had been opened were reaching different groups within the community:

- Community rangers had been particularly effective in reaching their peers, young men.
- District meetings seemed more effective in reaching men than women, who made up less than 40 percent of the participants. This was not surprising for an open public forum, but the fact that few attendees passed information on to members of their n!ore who did not attend was unexpected.
- Board members seemed to be doing an adequate job of reporting back to their own age group, elders. However, they did not move between villages, so the 55 percent of n!oresi without a board member only had access to information through district meetings and the community rangers.
- People who attended the Representative Council meetings felt well informed and felt that they had participated in decision making. However they, too, did not communicate results to residents of their n!oresi.
- Young women had the least effective and most indirect means of learning about board decisions and were dependent on information filtering down to them by word of mouth.

The Board of Management took steps to address some of these problems. Agreeing that the interests of women were not adequately included in the decision-making process, the board decided to expand its membership to facilitate communication with women in the community. Each district would add a representative to bring total

board membership to 5 women and 12 men. Since the Representative Council meetings seemed to involve in decision making only the 70 or so people attending them, the board decided it would be better to hold the meeting once rather than twice yearly, and to use the savings to engage more community members directly. An annual general meeting, open to all residents, would be held each May or June.[4]

None of these procedural steps, however, addressed lingering doubts in the community about the proposal for a conservancy. Most people had responded positively, but some feared that the idea was a ruse to expand the game reserve and evict local people. An exchange visit in March 1996 that allowed NNFC leadership and rangers to talk to the people implementing the CAMPFIRE Program, a similar effort in Zimbabwe, proved to be an important turning point.

The most encouraging lesson was that the CAMPFIRE Program had a five-year track record of providing benefits from game management that local residents were using for projects they had identified as priorities. As one Zimbabwean told a Namibian counterpart, "We also didn't believe the program would work. We didn't think we could trust the Department of National Parks and didn't understand how we would benefit. Now we have a community center, a small store, and an electric fence to protect our crops from elephants. The elephants are paying for our development." The Ju/'hoan visitors were also impressed with the participatory planning of the various CAMPFIRE projects, and agreed to undertake a similar planning effort in their own community to identify its priorities.

While the apparent success of CAMPFIRE was reassuring, some of the things they saw and heard raised concern among the Namibians. Most importantly, they wondered about the lack of feedback channels between decision makers on management committees and the community at large. Community meetings were not apparent, and many residents complained about being uninformed. The fact is that the communities, including the decision makers, were excluded from some information channels. The Department of National Parks, for example, controlled wildlife monitoring and set the quotas. The Ju/'hoan became more convinced than ever of the importance of community rangers. Unless they completed their patrols thoroughly and transmitted the results accurately, the Ju/'hoan would lack the independent information needed to make management decisions and convince others to honor them.

When they returned home, NNFC leaders took their message to the community in a series of local meetings. There they attested to their belief that the conservancy was the right path to follow, and through the new structures of communication the community gave them the go-ahead to proceed.

3.3 The Community as Effective Stakeholder (1996–1998)

The LIFE Program had taken an "empowerment" approach to participation by the Ju/'hoan for two interrelated reasons. First, the community could not manage its resources over the long-term without effective organization. Second, it would not get the opportunity to do so unless it could alter the prevailing pattern that favored the concentration of power in the hands of external actors. Aided by the change in legislation, it became possible to move forward on both fronts. Establishing a conservancy would require the community to demonstrate it could formulate a management plan and had the means to carry it out. In doing so it would begin the process of realigning power relations so that the Ju/'hoan were on more equal footing with the other stakeholders in the area.

Parliament set the bar for establishing a conservancy and specified requirements that had to be met (Aribeb 1996). There had to be clear physical boundaries that neighbors accepted and respected. The people living within the conservancy had to define its membership, and there had to be a plan for equitable distribution of benefits. A representative body, accountable to the community, had to be in charge of running the conservancy, and it had to demonstrate commitment to and capacity for sustainable wildlife management. Before a conservancy could be legally established, MET had to certify an offtake quota, and the governor of the region had to approve the boundaries.

To prepare the ground for final approval, the LIFE Program pursued two strategies. First, both directly and by supporting the efforts of the institutional consultant, the program provided skills,

training, and facilitation of community problem solving to strengthen the NNFC's ability to plan and manage a conservancy. The NNFC also used LIFE funds to add staff, hiring the wildlife biologist and range management expert mentioned in the introduction, and later a tourism advisor and a craft specialist. Second, the LIFE Program worked as a broker between the community and the MET, often assisting both groups to find underlying commonalities by creating opportunities to share viewpoints and perspectives. When members of each side met in sessions of the NNWMC to discuss conservancies, they discovered that the goals of the MET and the indigenous community were amazingly consistent.[5] The LIFE advisor had prepared the way by leading the NNFC through a goal-setting activity that allowed the community to articulate its objectives without influence or pressure from the MET.

A March 1996 meeting facilitated by the LIFE advisor provides a sense of how dialogue between the two parties evolved. MET representatives and the NNFC leadership were asked to independently identify the five or six wildlife species that were most important to them. Each group also had to specify the criteria used to rank importance. Not surprisingly the two parties chose many of the same species, with the important exception of the community initially omitting elephants and predators (lions, leopards, and hyenas). The groups identified different criteria, however, with one important exception. The community's criteria emphasized importance for manufacturing household items; spiritual value for healing; meat; and income. The MET's criteria emphasized importance to biodiversity conservation, ecological integrity, and financial returns. Each group then explained their "picture" to the entire group. After a long discussion of biodiversity—what it is and why it is important—the community members agreed to add this criteria to their matrix. And when the community realized the financial benefits that elephants and predators could bring to the community, those animals were added to the species list.

Perhaps more important than the actual matrix was the discussion it sparked. Both groups saw value in managing the wildlife, and the MET was willing to accept use by the community in return for their anticipated support. Similarly the Ju'/'hoan were willing to tolerate the threat and costs of elephants, lions, and other predators if they could be assured of financial return from these species. Both sides saw the importance of collaboration with the private sector in meeting their objectives. The LIFE Program agreed to facilitate contacts with vendors to solicit bids and terms.

One of the last remaining hurdles was agreeing on how to determine baseline population numbers for each species in order to set offtake quotas. Although the face-to-face dialogues had made progress in resolving problems between the two parties, the long history of mistrust and lack of transparency and accountability made it impossible for either side to simply accept information provided by the other stakeholder in a matter this crucial. Senior MET officials joined the NNWMC dialogue soon after Parliament passed the conservancy bill, but holdover staff in Tsumkwe seemed either incompetent to perform the technical tasks assigned to them or unwilling to do so. From MET's point of view, the NNFC had no experience in conducting so complicated a task.

The LIFE Program addressed this mismatch by providing funds for the NNFC to hire their own wildlife biologist and range management expert as consultants. They were to play a dual role, helping the community develop a plan that could stand on its merits and providing analysis of MET figures to assess their reliability. As discussions between MET staff and the NNFC leadership unfolded, it became clear that undertaking independent data collection and comparing results would only exacerbate the conflict. When this was factored into the duplication of costs and the number of skilled people it would take, the consultants suggested a combination of approaches (Stuart-Hill and Perkins 1997). MET would conduct a regional census of game populations to provide a broad view of distribution and population trends. MET and the NNFC would jointly carry out a census to obtain estimated populations in Nyae Nyae. Each party would independently evaluate the buffalo population to assess its condition and gender and age distributions, and then compare the results. Finally, the NNFC would be responsible for monitoring harvested game.

In May 1997, just as the final snarls seemed smoothed out and the conservancy was on its

way, the governor of Otjozondjupa Region refused to ratify the boundaries. Apparently this stemmed as much from uncertainty about, as rejection of, the concept. Conservancy advocates in Namibia had not brought local government into the process sufficiently for officeholders to understand the policy or its effect on their interests. Outreach was limited to an explanatory letter from the Permanent Secretary of MET and to a governors' workshop held jointly by MET and LIFE in June 1997. Most regional authorities simply did not know what conservancies were when the first communities approached them for approval of proposed boundaries. Once the MET explained the policy, its importance, and the role of regional government, the governor signed the application. As a senior staff member in the MET explained it, "Many regional councils are now behind the conservancy policy. We are the only ones paying any attention to them."

In January 1998, the MET officially recognized the Nyae Nyae Conservancy as the first in the country and approved an offtake quota of valuable wildlife species. With this authority the NNFC leadership, having discussed options with the conservancy members at district meetings, negotiated a contract with a prominent safari operation that included both trophy hunting and photographic tourism. In addition to paying fees to the community, the operator agreed to provide training and employment for some conservancy members.

IV. The Road Ahead—Problems and Opportunities

The NNFC and the community it represents finally got their conservancy. But can they make it work over the long term now that they face the very real challenge of limiting subsistence hunting? While local residents have agreed to a moratorium on threatened species, it is unclear whether community cohesion and the institutional framework are strong enough to make the decision stick. Discussions about how to use money from the conservancy illustrate the difficulty. Most conservancy members have agreed that it is critical to use earnings from tourism to purchase stock to replace the meat that will be lost from reduced subsistence hunting. The debate has centered on purchasing springbok (a species of small antelope) or goats. The NNFC would manage the springbok as a common resource, while the goats would belong to each n!oresi. An elder made the following telling comment: "We would prefer the goats because they would be ours and we would take care of them. The springbok would move all around and would be taken by people living elsewhere."

Much will depend on the ability of the NNFC to resolve its own inner contradictions so that all elements of the community believe their interests are being served and protected. Much remains to be done because linkages to the community as a whole are still tenuous. Only a few board members go beyond their immediate n!ore to report on decisions of the NNFC leadership. Adding women board members was an important step, but it did not open access to information or more involvement in decision making for the majority of women. One idea to redress these problems has been to expand the community rangers. Women would be selected who would focus on craft production, commercialization of wild foods, monitoring the impact of game and livestock on wild plants around water points, and making sure that the board is exposed to a broader set of issues and concerns.

This is not simply a matter of gender equity but of using the conservancy to build a more secure base for the future. The Ju/'hoan are dependent on more than game for survival. One indication of this came in the difficulty the community had in establishing conservancy boundaries. The task seemed simple enough from the outside. The veterinary fence to the south, the border fence with Botswana to the east, and the Khaudum Reserve to the north left only the western border to mark. Meetings were held with n!oresi in the west, but these communities and their leaders chose not to join the conservancy. The senior community ranger visited the westernmost villages that wished to join and took Global Positioning System (GPS) readings for their resources that would demarcate the last remaining boundary line. It still took several months for the NNFC leadership to resolve the matter. Some community members not only wanted to include the villages that had declined to join but areas even farther west that lay outside Nyae Nyae altogether and had no wildlife. When asked why, people explained that they did not want to be cut off from gathering bush foods essential to their livelihoods during times of drought.

The effort to expand activities from the conservancy beyond wildlife to crafts that can be sold to tourists visiting the area and the Khaudum Reserve can also be viewed in this context. It not only makes good economic sense, it is also a way of building support for the conservancy in villages that do not have ample game. It also has the advantage of bringing a broader array of resources into the community-based system of sustainable management.

However a new problem has accompanied the new opportunities. Now that the Ju/'hoan see many of their crafts as valuable sources of income, the traditional view of ownership has come under stress. By custom the raw materials belong to all members of the n!ore in which they occur, but they become the property of the person doing the craftwork. The n!ore kxao, as leader of the group and steward of its common resources, manages the resource base for the benefit of everyone. So it was a surprise when a steward, just before the conservancy opened, began charging craft producers fees for the resources they had collected and were using. The issue was discussed at a village meeting, and the villagers, at the urging of NNFC, agreed to uphold the traditional system. The n!ore kxao went on charging fees anyway. His actions were confined to one village, but they point to a new set of issues that will not go away and that the Ju/'hoan will have to address. Versions of private ownership may arise that can result in social and economic inequality and fracture support for the community institutions managing the conservancy. Serious resource degradation could follow, as happened in Kenya when the government created "group ranches" on land that the Masai had previously held collectively (Lawry 1990).

Many of the problems that the Ju/'hoan face are not of their own making. What they are being asked to do is extraordinarily difficult—to manage a resource to which they have limited rights, and to do so without secure tenure over the communal land upon which the sustainability of that resource ultimately depends. The final section looks at some of the lessons this project offers to community-based resource management not just in Nyae Nyae, but in Namibia and elsewhere.

V. Lessons from the Ju/'hoan Bushmen

The story of the Ju/'hoan is unique in many ways. It is developing against a backdrop of a relatively progressive policy and legislative framework, with secure long-term funding in which money and technical assistance are well matched to the tasks. It describes a homogeneous community with a strong cultural identity that holds dear its wildlife for both intrinsic and subsistence values. Furthermore the community's goals are compatible with those of the MET, the leading conservation organization in the area. Perhaps most important, there is still time left for Nyae Nyae. Ecologists say the habitat remains intact because the Ju/'hoan have so few cattle. Given additional water sources, the game should recover (Stuart-Hill and Perkins 1997).

Yet the Ju/'hoan are traveling a road that many other local communities will find familiar. The status of the Real People as indigenous and marginalized, for instance, has led some outsiders to assume that the most effective strategy is to do things for the Ju/'hoan rather than to strengthen their ability to do things for themselves. Others have noted, in myriad places, the damage that can spread from this misperception. This perspective "reveals the dangers inherent in links between community and external actors. External interventions can easily shift from facilitation to co-option" (Murphree 1994). Murphree concludes: "Community-based conservation programs thus pose a dilemma: [T]hey require the very community–external linkages that have such high potential to subvert the community itself." Murphree suggests that clear priorities should be specified for all activities and that the community's interests, responsibility, and authority should be paramount. Jones (1996b) adds, "Institutional relationships must be structured so that outside organizations are cast firmly in the role of supporting agencies to community organizations."

The following lessons can be drawn about conservancies and community-based natural resource management (CBNRM). They ring with greater authority for other communities in Namibia, but they offer insights that will be of use elsewhere.

5.1 Legislation to grant rights to select resources can be self-defeating if collective communal units do not also have or receive strong property rights to the land itself.

In Namibia the conservancy legislation clearly stipulates that the community does not have rights over the land, only usufruct rights over some of the wildlife and the benefits derived from them. This creates a double bind. The official policy to decentralize wildlife management by handing it over to the local community is subverted by denying the community the secure tenure it needs to maintain sustainable game populations. For example, in Nyae Nyae the community has no legal authority to prevent the Herero from moving again into the conservancy to graze their cattle. There is no guarantee what will happen if government turns a blind eye. Unless the conservancy is grounded in secure tenure, it will be in constant danger.

The lack of comprehensive legislation is not simply a question of the state trying to retain final authority. It also points to how policy reform is rarely coordinated, and how the state often speaks with more than one voice. Although senior policy makers at the MET are aware of the double bind, the agency lacks the power to address it directly. It has chosen instead to work closely with local NGOs to play a prominent role in developing an NGO position paper to clarify and sharpen the public debate on land reform. International conservation NGOs can support policy analysis necessary for reform and provide this information to the advocates of change. The LIFE Program supported a critique of the conservancy legislation by the University of Namibia and outreach activities by others.

5.2 Legislation is hollow without the resources, skills, and political will for implementation.

By almost any standard, the legislation in Namibia is progressive—it gives local communities the authority to manage and benefit from their resources. What sounds good, however, may not be good in practice. In Nyae Nyae the MET lacks the financial and human resources to carry their share of the load, which threatens to undermine the building of an effective partnership with the community. MET's local branch staff is frequently unable to meet its commitments to collect data or attend meetings.

Indeed there are doubts about how fully committed the agency is to carrying out the legislation. A debate still rages within the ranks of MET between advocates of preservation and of community-based natural resource management. Senior officials talk the new talk. But field staff tend to change attitudes only with the addition of new personnel when holdovers leave by attrition, rather than through some systematic process. The MET has yet to change job descriptions, performance criteria, and training procedures to support CBNRM, and many field staff lack the skills and experience necessary to work with the community. As one MET official casually stated, "I took this job because I wanted to be alone in the bush with the wildlife, not to work with communities."

This debate exists within many conservation institutions, and will not be easily resolved. Yet unless change occurs throughout an institution, the handful of dreamers and visionaries who speak for the organization will be unable to shift its approach and philosophy on the ground.

International conservation NGOs can support training—targeted at both field staff and national policy makers—as well as create forums for policy debate. Conservation NGOs are in a position to see the big picture and address an institution as a whole, rather than argue a narrow point of view shaped by the interests of patrons or the guarding of bureaucratic turf. However seeing the big picture and offering help is not always enough. Namibia illustrates the paradox that can ensue. LIFE's attempts to address the lack of political will within MET were met by indifference to the opportunities for change offered by the program. Training works only if the institution wants its people trained and if the staff is open to new ideas and approaches. The challenge for conservation organizations in finding ways of encouraging institutional reform and capacity building is not simply a question of finding and distributing the right manual. One must work closely with staff and design efforts that are adapted to the specific circumstances at hand.

5.3 Local governments are stakeholders and must be involved in the policy process.

Local governments' interest in resource management within their jurisdictions makes them legitimate stakeholders. They play a role in coordinating and balancing local interests and are often involved in land-use decisions. There are several ways to increase their involvement. One is simply to keep them informed of what is happening and why. They might also be given a greater formal role in legitimizing local community institutions or activities. Taxes on income generated by the conservancy might also be paid into the local government coffer. While the community's interests are paramount, other interested parties must also be accommodated.

Local governmental structures, often only recently empowered with rights and responsibilities, are hesitant to pass on this newfound authority to lower levels of social organization. Murphree (1991) refers to this as "the bureaucratic impulse to resist the loss of authority and the tendency to enlarge administrative structures." In addition, when financial benefits are at stake, local government may want to retain resource control for its own present and future obligations. Local public structures may see community empowerment as a threat to their decision-making authority and the means to reinforce or expand their power.

To prevent local government from hijacking the process, legislation must strongly and clearly give rights to community institutions and define the role the local governmental structure is to play. Even if there is a lack of political will to fully implement the legislation, communities will pressure authorities and demand their rights if they know they are being cheated out of them. Murphree (1997) writes, "To the farmers of communal lands, the delineation of what they are missing is a critical step in the escalation of their assertiveness."

5.4 Fully integrate local knowledge, values, and social organization into the project cycle.

While this lesson is not new, the Ju/'hoan case supports the tenet that integrating local knowledge into the project cycle is likely to result in activities that are more appropriate, and therefore probably more sustainable. Efforts to do so, however, must go far beyond merely documenting traditional beliefs and practices, as many anthropologists have done in Nyae Nyae, to engaging communities in substantive dialogue and joint decision making. This takes patience and significant resources. Conservation organizations need to think in terms of building a long-term dialogue grounded in mutual respect and trust. Care must be taken not to undermine local communities' rights to self-determination by acting precipitously to conserve biodiversity.

5.5 There can be significant differences between democratic procedures and democracy.

The staff of the NNDFN who built the early structures of the NNFC had the best interests of the Ju/'hoan at heart. They designed the institutional structures in the image of what they knew best: democratic procedures revolving around representatives and elections. Ultimately this approach resulted in the exclusion of subgroups within the community, particularly women and elders, and a takeover of decision making by elites. The LIFE Program facilitated the community's search for its own solutions. Recognizing the need for an organization that would have authority, legitimacy, and be able to communicate effectively with external actors, the Ju/'hoan settled on the Board of Management, accompanied by several additional communication paths: the community rangers, district meetings, and an annual general meeting. As Megan Biesele (1994) writes, "allowing traditional ideas and models to persist or to be changed organically by the people's own initiatives is a pretty good indicator of democracy at work."

The Ju/'hoan have made great strides since 1994 in building the accountability and transparency of their community institutions, but work still needs to be done. The current system of district meetings is still overly dependent on transportation provided by the NNFC, and not all residents attend. It could potentially be beneficial to explore a more "bottom-up" approach and expand the district organizational concept to include "village associations." It would be possible for the board to construct, jointly with village residents, maps depicting n!oresi that work together to manage natural resources. These

groups of collaborating n!oresi could then form the basis of village associations. This would build on the traditional networks for managing common resources. One or more members of the board could represent these "n!oresi associations." Current board members would probably remain—the change would be in the extent of area covered and number of people to whom they must report.

5.6 Outsiders have an important role to play as facilitators of community analysis and decision making, and as brokers between the community and other stakeholders.

The facilitative role of LIFE's technical advisor for community-based natural resource management was crucial to the development of the Nyae Nyae Conservancy. Underlying this role was a commitment to the community's inherent right to plan, manage, and benefit from their resource use. The community learned from mistakes and adjusted its program accordingly. The outside organization played an important role in undertaking independent annual assessments and assisting the community with analyzing the issues and developing possible solutions. But facilitators must consciously recognize the potential dangers of inadvertently co-opting the community to the facilitator's point of view rather than sparking the development of the community's own ideas. Co-option can too easily subvert rather than support community-based conservation.

The goal is to prepare the community to participate in authentic partnerships. An authentic partnership has four qualities: mutual trust, transparency, reciprocity, and accountability. Both parties must know that promises will be honored, and this must be demonstrated over time. Agendas must be clearly stated; sources of funding, allocations, monitoring and evaluation reports, and other pertinent information must be shared. Neither party should impose a condition on the other that it is unwilling to undertake itself. Finally, partners must agree on procedures by which they will be held responsible for their actions.

LIFE thought of partnership in two ways. The first involved its own relationship with the community in building strong and flexible representative institutions. The LIFE Program played a critical role in facilitating community-level discussions of the key issues in order to identify solutions (Jones 1996b). Providing the community with an annual independent assessment and then facilitating their analysis and integration of the results into project management was key to building skills in problem solving, gender analysis, institutional development, and strategic planning. LIFE also facilitated training and helped the community hire and learn how to manage the technical assistance it needed, based on the belief that previous low levels of participation in decision making stemmed from the community's lack of skills and knowledge. Care was taken to make sure that the community set the pace so that facilitation did not mutate into a patron-client relationship in which the community took a secondary position as the "less skilled, less informed" partner.

As the community found its own voice, attention turned to helping it become an effective partner with other stakeholders in resource management. This would eventually involve other actors, but the key early relationship was with MET. The LIFE technical advisor acted as a broker in the evolving relationship. Experience has shown that for an authentic partnership to form, all stakeholders must recognize the community's right to participate in decision making. So a key early decision was to narrow the focus of the NNWMC to wildlife issues within Nyae Nyae. As a result, the stakeholders were limited to MET staff, subsequently including the Directorate of Forestry, and the NNFC, represented by its board and the community rangers. By limiting the topics and thereby the interest groups, it was easier to reach concrete decisions and implement them. Generally LIFE's technical advisor would meet with NNFC representatives before the NNWMC meeting to help them plan strategy, prepare discussion points, and decide what they believed was or was not negotiable. During the meetings, the advisor helped each side see the other's position, understand the motivations behind it, and develop a mutually understandable language for seeing the big picture and bringing issues and solutions into focus.

To ensure that the community could participate fully, meetings were scheduled whenever possible in Nyae Nyae since MET headquarters in the capital city is a hard eight-hour drive away. That placed a burden on MET, which is also often

strapped for time and resources. So the LIFE Program provided funds to enable the NNFC to reimburse its representatives when travel was necessary. NGOs and donors working with community-based organizations must realize that meetings will often be held far away from the local community, in cities and office buildings of more powerful stakeholders. Community representatives will need to be compensated for time spent away from their homes and work. They will also need resources to be able to hold meetings with their constituents before they depart and after they return.

Communication did improve and power relations became more balanced once MET adopted community-based conservation as its official policy in 1996, but obstacles to an honest partnership remain. Prior to establishing the conservancy, the NNWMC meetings never resulted in joint decision making by the local community and MET. The underlying problem is that the NNFC lacks the authority to participate in all aspects of wildlife management, the most obvious being the lack of control over land. That may begin to change as the NNFC shows its ability to manage the conservancy, and as realization deepens in MET that neither the central government nor the community can manage wildlife sustainably until there is communal land tenure.

Finally, while not explicitly analyzed in this case study, the LIFE technical advisor worked as a member of a team. The expertise and knowledge of a diverse group of specialists were needed to support the *integrated* conservation and development program of a conservancy. Because the Nyae Nyae Conservancy was developed within the context of a national CBNRM program, it was also important to facilitate the sharing of experiences and learning within the network of communities developing conservancies.

5.7 Replication is not duplication, but projects have much to learn from one another.

Visiting the CAMPFIRE Program in Zimbabwe was a crucial step in the evolution of the Nyae Nyae Conservancy, because it gave NNFC leaders and the community rangers confidence in the enterprise and a better perspective on how they would do things differently. Now Nyae Nyae has blazed a trail that can be followed by other communities in Namibia.

Several factors will make it easier for other Namibian communities to follow and embellish the NNFC map. The national program is growing, and more NGOs and communities are signing on. As they plan and develop conservancies there will be greater opportunity to exchange experiences and skills. The MET is slowly evolving its methods and philosophy to be better able to implement the policy. Local government is increasingly involved and supportive. Specific tools for awareness building, for using GPS mapping to promote participation and communication, and for analyzing institutional capability have been developed.

Yet one should not presume that progress will be uniform. Several factors have also made development of the conservancy in Nyae Nyae easier than it might be elsewhere. The conservation goals of the MET—to maintain biological diversity and ecological processes and to improve the quality of life for all Namibians—are compatible with the livelihood strategies of the Ju/'hoan. Generally, conflicts have not stemmed from differences in objectives, but from differences in the means employed to reach those objectives. The conservancy is an approach, legitimized through legislation, that both parties have agreed to follow to reach similar goals.

In other regions of Namibia compatibility of goals is far less clear. In areas where crop production is dominant, for example, conflicts are more prevalent. Furthermore, the specific contexts, both social and ecological, are different. Although the conservancy concept still offers a viable option in these cases, the size and membership of the conservancy, the ways of benefiting, the institutional structure, and the definition of the partnership will vary widely.

Many challenges lie ahead for the Ju/'hoan and the other communities involved. In some ways, the most difficult work—ensuring that the community manages the conservancy sustainably and delivers benefits equitably—is still ahead. For that to happen, the government-community partnership must continue to evolve. Without the willingness to learn from one another, management of wildlife and other natural resources is likely to prove impossible.

Endnotes

1. This work draws upon the ideas and experiences of many other practitioners and academics, including Marshall Murphree, Hugh Hogan, Murray Dawson-Smith, Neil Powell, Jo Tagg, and the whole LIFE team. I thank Janis Alcorn and Mac Chapin for their comments and close readings of earlier drafts. I am particularly indebted to Brian Jones, a longtime colleague and friend, without whom the work of the conservancies would not be possible. Most important, I wish to thank the people of Nyae Nyae for sharing with me their time and ideas, especially Kxao Moses =Oma, Benjamin /Ai!ae /Aice, and Shebby Mate. I would not know what I think I know today if it were not for their patience, detailed explanations, and support during my years in Namibia.

2. In January 1997 a small group of Bushmen staged a protest demanding the return of their indigenous territory, presently Etosha National Park. They were quickly arrested and silenced, but not before their story reached the international press. Then in April, John Hardbattle from Botswana took a case to the Human Rights Commission to protest the removal of Ju/'hoan from the Central Kalahari Game Reserve.

3. The evolution of the NNFC before 1995 is documented more fully in Wyckoff-Baird (1996).

4. As a result, attendance rose nearly fourfold, reaching as high as 250, or more than 25 percent of all adults.

5. The Nyae Nyae Conservancy constitution states: "The community residing in the Nyae Nyae area of Tjum!kui District wishes to establish a conservancy to: 1) restore and sustainably manage and utilize the area's wildlife for the benefit of present and future generations and for maintaining Namibia's biodiversity; and 2) promote the economic and social well-being of the members of the conservancy by equitably distributing the benefits generated through consumptive and nonconsumptive exploitation of the wildlife."

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Part Three: Conclusions

CHAPTER 8

Signposts for the Road Ahead

The concluding part of this book contains two sections. The first draws lessons that emerged from discussions of the case studies at a workshop on collaborating with indigenous groups held by WWF in 1998. The second looks to the future and what conservation organizations are doing, or need to do, to advance stakeholder collaboration.

I. Lessons from Experience

In 1998 WWF staff from programs and projects around the world met to pool their knowledge about collaborating with indigenous groups and to distill from firsthand experience lessons for future conservation efforts. Case studies presented by their authors provided rich, practical information to fuel the discussions. While the case study contexts were quite different, several common themes emerged. In general, the cases revealed that what worked best were community-level efforts that involved

- dialogue, joint activities, and mutual learning on shared interests in natural resource management;
- in-depth understanding of the local socioeconomic context and institutions;
- focus on a resource that the community believed was threatened; and
- relatively small financial inputs and technology that matched communities' skill levels.

The lessons are organized under four themes that were highlighted during the workshop discussion: finding common goals, strengthening indigenous institutions for collaboration, sharing conservation knowledge, and establishing appropriate project processes. Discussion of each theme concludes with a series of recommendations for how conservation organizations can improve collaboration with indigenous groups. Many of these recommendations are applicable to work done at larger scales, such as ecoregion-based conservation.

1.1 Finding Common Goals

WWF's experience reveals that while the goals of conservation organizations and indigenous peoples often overlap, their motivations and methodologies often differ. Indigenous people want to use natural resources sustainably to ensure their livelihoods, maintain control over their lands, preserve their cultural heritage, and provide for their children and grandchildren. In Brazil, Namibia, and Bolivia, indigenous communities

were concerned about the decline in wildlife populations not only because game is the most desired food, but also because hunting is a central aspect of their social life.

Conservation organizations, on the other hand, want first and foremost to conserve the biodiversity of important ecosystems around the world. To achieve this goal, they support a variety of strategies including strict protection, sustainable natural resource management and related socioeconomic activities, policy reform, partnerships, and capacity building.

Yet there are a number of areas where the interests of the two parties intersect. Geography is a powerful force binding indigenous groups and conservation organizations together. As discussed in the first two chapters, much of the biodiversity that conservation groups want to conserve is in areas where indigenous people live. Conservation organizations can benefit from the fact that indigenous groups are committed to living on and protecting the land over the long term. In turn, by collaborating with conservation organizations, indigenous groups can gain additional skills and resources to help them protect their lands and their ways of life. Mapping and other activities related to documenting resource management, for instance, can be important in establishing and maintaining legal tenure. Beyond tenure, both parties want to prevent environmental damage from large-scale economic and infrastructure development, and to develop sustainable alternatives. Finally, both have important knowledge to share about conservation and resource use. These common interests can form a foundation for collaboration, and set the stage for lasting partnerships.

Where this confluence of interests sometimes splits is in setting resource management priorities, such as which species are most important to protect, appropriate levels of resource use, and what strategy will be most effective. Differences also tend to emerge regarding the degree to which conservation organizations should support economic development activities. Geographically, conservation organizations are increasingly interested in conserving large regions containing multiple ecosystems that often go beyond the boundaries of indigenous territories.

In some cases, differences that seem deep-seated are actually the result of misunderstanding. For example, while indigenous groups are generally not familiar with the term *biodiversity*, they are concerned with conserving a diversity of resources to maintain healthy subsistence economies, to protect important aspects of their cultures, and to benefit future generations. If their respective priorities are better understood through creative planning and compromise, the two groups can collaborate to achieve their goals.

In the case study from Ecuador, the objectives of the government, donors, NGOs, and the indigenous federation and its community members overlapped, but did not completely coincide. The Runa wanted to secure their land and livelihoods over the long term. Beneath this unity of purpose, however, the federation and the participating communities had their own agendas, which were not thoroughly aired before the project got under way. Development agencies and conservation groups were promoting a sustainable forestry enterprise that would help put the market to work conserving habitat. They did not ask whether the model chosen was appropriate to communities that had never worked together or had prior experience running an economic enterprise. Funding was short-term and tightly scheduled so that basic questions about local capacity to carry out the project once outsiders withdrew were not asked or answered. Insufficient attention was also paid to the federation's capacity to help not only these but other communities once the funding ran out. The government, meanwhile, moved forward on its own and established a park in which Runa communities would have no decision-making role but would serve as a cost-effective buffer to prevent encroachment by colonists. As a result, much of the community now sees the park not as a protective shield but as a loss of control over their ancestral territories. If the stakeholders had discussed and reconciled their objectives at the outset, a different project design might have emerged that would have been more sustainable and had wider impact.

While indigenous people and conservationists may have common interests, the time frames for achieving their respective goals are often different. Conservation groups are often bound to a three-to-five-year project cycle established by

their donors. Obviously the lives of indigenous peoples do not revolve around a project cycle. They often need time to assess what is happening to their environment, absorb new information and ideas, and develop their own solutions. In the Brazil case, when the community said they needed several months to discuss the proposed management plan, project staff gave them the space to work through the issues. Developed more recently, the Namibia project is unique among conservation and development projects in that it was designed to be implemented over a 10-year period. This long-term commitment reflected awareness of the time it takes to understand the local context, build trust, strengthen capacity, create a favorable policy environment, and design appropriate activities. Once a grant ends, conservation organizations can also support indigenous groups in other ways, such as providing them with advice and information and with links to networks and other resources.

The collaborative process is often as important as the explicit project goals. Priorities need to be clearly articulated and discussed at the beginning of a potential collaboration to ensure that common ground exists, and to avoid misunderstandings down the road. In some cases, groups may have secondary agendas that will emerge through a process of dialogue. The development of resource management plans was successful in the Brazil, Namibia, and Papua New Guinea cases because of how decisions were reached. All of them involved a long process of dialogue with communities, including joint data collection, which allowed new information to be absorbed and stimulated the recovery of traditional knowledge. By working closely with the community, an outside expert earned peoples' trust and helped them identify and assess their options. Because the community could take the lead role in developing a strategy, a consensus was formed that made the strategy easier to implement.

Conservation organization staff or other outside advisors who play roles as facilitators, acting as brokers between the community and other stakeholders and exposing communities to new ideas, must be sure that the community accepts their role and is aware that advisors also have their own priorities.

Recommendations

- Don't embark on a collaborative effort with preconceived solutions; be aware that give and take are needed in order to reach a sustainable solution.
- Recognize the dynamic change indigenous cultures are undergoing; outside organizations seeking to partner with them need to respect and support, as appropriate, their efforts toward self-determination and socioeconomic development.
- Make a long-term commitment to dialogue and partnership.
- Make sure that communication is two-way; be clear, transparent, consistent, and honest in communicating with partners.
- Secure the agreement of all partners regarding who will facilitate the collaborative process.

1.2 Strengthening Indigenous Institutions for Collaboration

In order to manage their resources effectively and interact equitably with other stakeholders, indigenous groups need institutions that are able to identify and articulate their priorities. To advance their agendas, indigenous groups have in recent years formed a variety of organizations including community-level associations and regional and national federations. The form that these institutions take is often influenced by outsiders who promote the democratic structures and procedures, such as representatives and elections, with which they are most familiar. As discussed in the Namibia case, this can result "in the exclusion of subgroups within the community, particularly women and elders, and a takeover of decision making by [young] elites." New project staff subsequently facilitated a process in which the community used traditional values to forge their own unique institutional structures and means of communication.

Before becoming involved in modifying old or establishing new institutional structures, conservation organizations need to understand the culture, subgroups within the community, and traditional decision-making processes. What works will often be a blend of new and old decision-making mechanisms that both builds on traditional practices and

adapts to current realities. In the case of Papua New Guinea, clan groups that are the traditional decision-making structures and recently formed Wildlife Management Area Committees both played a role in the fish-monitoring effort. In Namibia, the first three years of the project were devoted largely to institution building.

How they represent themselves to outsiders is an issue that traditional cultures increasingly need to address. In many of the groups featured in the case studies, individuals do not have the authority to represent the group. The Ju/'hoan in Namibia say "each one of us is a headman over himself." In many indigenous communities, young, educated, and articulate men are beginning to promote themselves as community spokesmen, playing the role of what one author calls a "culture broker"—a person who can interact in both the traditional and the modern worlds. Outside organizations are attracted to this type of leader since they find it easier to communicate with one individual who speaks the language of modernity. As was the case in Namibia and Brazil, culture brokers can pose problems if they lose touch with the community and forfeit its trust.

In several of the cases, as decision-making processes became more formalized, certain sectors of the community were excluded. The exclusion of women proved to be a crucial omission since women are often involved in subsistence activities and have knowledge key to natural resource management. In Papua New Guinea and Brazil, separate meetings were held with women in an attempt to bring their perspectives into the planning process. In Namibia, institutions and leadership structures were adapted through a process of participatory research to make them more responsive to all sectors of the community.

Federations of indigenous organizations played central roles in all of the Latin America cases, particularly in getting indigenous concerns on the national agenda, lobbying for laws and policies to expand indigenous rights, and obtaining donor funding. Yet they are having difficulty moving beyond public advocacy to the effective provision of services, including efforts to help member communities design and implement income-generating projects based on renewable resources. The lessons that apply to building capacity with local associations and communities also need to be applied at the federation level if ecoegion conservation is to be achieved. Federations in Ecuador, for instance, have formulated proposals for comanagement of protected areas, but they still need to demonstrate the skills that are required to put the idea into action. The state is much more likely to regard them as a partner if it believes they can pull their own weight. NGOs and donors can play an important role in encouraging the state to experiment with such partnerships and can provide technical assistance to help participants make them work, as was the case in Namibia.

Recommendations

- Take time to understand traditional decision-making structures and processes before modifying or establishing institutions.
- Recognize that forming new organizations takes a lot of time, effort, and resources, and that communities need the time and space to develop or modify their own organizations.
- Verify that representatives of community groups truly represent the range of community views; be aware of the pitfalls of working through "culture brokers" or an educated elite.
- Find appropriate ways to involve disenfranchised groups, such as women, in natural resource planning and management.
- Examine the strengths and weaknesses of federations of indigenous groups as partners in large-scale conservation efforts, such as ecoregion-based conservation.

1.3 Sharing Knowledge about Natural Resources

Enhancing mutual understanding and information sharing between Western scientists and indigenous people about natural resources and ecological processes produces better conservation plans, as exemplified in several of the cases. The authors suggest that two types of indigenous knowledge are important for conservation. One type is practical and includes information about day-to-day resource use that can help in the development of resource management plans. The other is broader and encompasses a culture's

views of the relationship between people and nature. This information is important to understand when talking to communities about conservation goals.

Traditional knowledge is dynamic, not static as is often assumed. It is modified over time as communities interact with the external environment. But it is also eroding rapidly around the world, becoming stories rather than methodology—a trend which will be a great loss for peoples' cultural integrity, and for conservation. Recognition of the importance of traditional knowledge is not only important to natural resource planning; recovering this knowledge reinforces cultural pride, helps communities understand how changes in their lifestyle are affecting the resource base, and mobilizes participation to implement remedies.

Resource management planning is much more effective if there is a two-way exchange of information between biologists and indigenous groups about natural resources and their use. Local people have detailed knowledge about species that are important to them, but often a more limited understanding of the overall characteristics of the wider ecosystem and how resource use affects it. To benefit from each other's knowledge, these two groups need to find more effective ways of communicating and understanding one another.

The Xavante project in Brazil was among the first attempts to integrate hunters' and biologists' understandings of game management. In Papua New Guinea, scientists used traditional taxonomy to refine their own analyses and record the existence of two new species. The Brazil and Namibia cases show that by working with indigenous groups to develop management plans, Western scientists found indigenous knowledge useful in the establishment of wildlife refuge areas. An approach that worked in several cases was for biologists to develop resource management options (based on joint data collection) from which the community made the final selection. And because this process is grounded in dialogue, the plan that is selected incorporates procedures that allow for corrections as future circumstances dictate.

Recommendations

- Invest more in understanding and incorporating indigenous knowledge and world views into conservation planning.
- Promote greater understanding and information exchange between modern scientists and indigenous peoples. Use joint data collection and analysis, especially mapping, as a tool for building skills and for discussing natural resource management issues and priorities.

1.4 Establishing Appropriate Project Processes

The process or approach employed by a project can either create dependence on the donor or partner or build the community's capacity and motivation to sustain the activity. A key issue in determining which outcome prevails is the project's time frame and pace. Activities should be planned and implemented based on the community's ability to participate, so that local resources can be mobilized and local people can take responsibility and credit for outcomes. For example, community decision making is often based on consensus, which takes time to generate. Spending time up front to build community skills and institutions also builds a foundation for sustainability. Short-term funding cycles and rigid project time frames do not give the community enough time to assess resource management issues, gather needed information, and generate and discuss options.

Enabling the community to play a greater role in project implementation in areas like staffing will also increase their "ownership" of and ability to manage project activities. For example, in the Xavante project the community and the conservation organization jointly developed a list of three candidates for a game monitoring position, from which the community selected the finalist. In Namibia, the project provided funds for a biologist who was identified and managed by the community.

Policies that expand local control over resource decision making are another important way to empower indigenous communities. In Namibia, the passage of the conservancy law, which WWF actively supported, helps the Ju/'hoan reinforce their borders and control incursions. This, in

turn, provides the security the community needs to invest in resource management. In Bolivia, a newly enacted forest law is positive in that it recognizes local communities' role in natural resource management. However, some of its requirements, such as the stipulation that communities produce resource management plans endorsed by forest professionals, price local people out of the process and can bring community action to a standstill. Both cases show that policy issues do not stop with the drafting and passing of legislation but extend to engaging the administrative agencies charged with drawing up rules and procedures for implementation.

A project's scale of effort can also affect its sustainability. In general, the case studies showed that the most successful efforts were those that had relatively small budgets and were carried out over a relatively long period of time. Too big an infusion of outside resources and the introduction of complex technologies can overwhelm local accountability and result in overdependence on outside institutions. In Ecuador, collaboration among three communities on a timber processing enterprise was found to be both socially and technologically unsustainable. The fruit-processing effort that paralleled the wildlife management project in Brazil also suffered from the same drawbacks. In assessing the impact of this lesson on efforts to conserve resources at larger scales, one should not preclude the possibility of scaling up community-level conservation efforts. Such efforts, however, should be tested at smaller scales, carefully planned to ensure they are socially sound, and proceed at a pace that participants can handle.

Recommendations

- Ensure that community decision-making processes, the pace at which participants are prepared to proceed, and the need for capacity building are factored into project design and implementation.
- Encourage donors to support more flexible project designs with longer time frames that can be adjusted midstream to respond to what is being learned.
- Promote national policies that expand community control over natural resource stewardship and lobby for adequate funding to move policy from the drawing board to actual implementation.
- Find ways to replicate successful small-scale efforts.

II. Toward Building Conservation Partnerships with Indigenous Peoples

WWF and other conservation organizations have recognized for some time that they need to work more effectively with a diverse range of stakeholders, including indigenous peoples, if conservation goals are to be achieved. Discussions at the 1998 workshop moved beyond what was involved in successful local projects to throw a spotlight on the potential for indigenous groups to be fully engaged as long-term conservation partners. It heightened awareness of indigenous peoples as important and unique conservation stakeholders, and generated recommendations for improving collaborative efforts with them. Regardless of the scale of the effort, successful collaboration between conservation organizations and indigenous peoples requires a foundation of mutual understanding and respect; a well-facilitated process of dialogue and negotiation; greater capacity built through acquisition of new skills and the creation of effective institutions; and a favorable policy environment. It is in these areas that conservation organizations need to make a significant investment.

Drawing on the recommendations outlined above, and the principles of stakeholder collaboration that they represent, WWF's work on indigenous issues moved forward on a number of new fronts in 1999:

- In the Bering Sea ecoregion, covering portions of the United States and Russia, WWF and its partners have recognized indigenous peoples as key stakeholders. As a result, input from indigenous peoples is actively sought on the threats, problems, and conservation needs of the area. Activities carried out during the past two years included 1) support for a major native peoples' summit that brought

together approximately 300 indigenous people to discuss conservation and the health of the Bering Sea; 2) the participation of native partners in press briefings to inform the public about issues affecting the region; and 3) the funding of a study of traditional resource use and a socio-ecological survey of local views on conservation and marine resources in order to gauge interest in establishing a marine protected area that would include subsistence activities.

- In the southwest Amazon ecoregion, WWF and its partners have been actively involved in engaging stakeholders and determining conservation priorities. In the Bolivia portion of the ecoregion, for example, WWF and other groups have begun to identify areas of significant biological importance, and in those areas to communicate with indigenous groups about exploring common interests. While much more information and consultation is needed, possible joint activities include biological inventories, the development of wildlife management plans, community-based wildlife monitoring, and the creation of a private protected area. Indigenous groups will also be an integral part of broad-based stakeholder dialogue and decision making in the ecoregion.
- The framework policy on indigenous peoples and protected areas on which WWF collaborated with the World Commission on Protected Areas (WCPA) was endorsed by the IUCN Council in April 1999 and the WWF network in May 1999. This is now the official IUCN/WWF/WCPA position on protected areas that overlap with the lands, territories, waters, coastal seas, and other resources of indigenous and other traditional peoples. The policy provides guidelines for forging sustainable partnerships with the people who have been the traditional guardians of a large number of the world's biodiversity-rich habitats before they became protected areas. Despite its limitations, the document represents considerable progress and will open more opportunities for collaboration with indigenous and traditional peoples to ensure the long-term survival of those areas.
- Capacity building for stakeholder collaboration is a WWF priority. Significant investments are being made to adapt what has been learned in prior fieldwork, develop new tools, and test them in pilot efforts that bring stakeholders together to resolve conflicts and forge coalitions that further conservation goals. Working with indigenous groups will be an important part of this effort.
- New developments have taken place in several of the projects reviewed in the case studies. In Papua New Guinea, the fisheries management plan is being implemented and resources are being managed more sustainably. Income is being generated through a variety of community-run enterprises in Namibia. In Brazil, the resource management plan is being returned to the community via a manual and audiotapes in the Xavante language.

A common sense of urgency has made conservation organizations and indigenous peoples increasingly aware of one another and multiplied the opportunities for collaboration. The possibilities are limited largely by the willingness to look for them. While their aims and approaches are not identical, nearly a decade of experience shows that when both groups are willing to listen to one another and be flexible when searching for common ground, both will make progress toward realizing their goals. Effective partnerships are being forged from an awareness that the land and its natural resources cannot be protected unless all its stewards learn to work together.

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Photography

Cover (upper left), Kate Newman; cover (upper right), Laura R. Graham; cover (lower left), Dominique Irvine; cover (lower right), Bija Sass and Paul Smotherman; page 21, William H. Durham; page 47, Laura R. Graham; page 73, Giandomenico Tono; page 91, Bija Sass and Paul Smotherman; page 113, Kate Newman.

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Annex

Indigenous Peoples and Conservation: WWF Statement of Principles

A WWF International

Position Paper

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Foreword

Preamble

I. Rights and Interests of Indigenous Peoples

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Foreword

Indigenous peoples inhabit nearly 20 per cent of the planet, mainly in areas where they have lived for thousands of years. Compared with protected area managers, who control about 6 per cent of the world's land mass, indigenous peoples are the earth's most important stewards.

During more than three decades of conservation work, WWF has been approached by many indigenous and rural communities seeking collaboration on issues like protected area management and the conservation of natural resources. Notable amongst them are the Hupa Indians of northern California, the Inuit of Isabella Bay in Canada, the Zoque Indians of Mexico, the Karen of Thailand, the Shona people in Zimbabwe, the Kuna of Panama, the Shimshali of Pakistan, the Phoka people of northern Malawi, the Imagruen of Mauritania, the Ewenk of Siberia, and many others scattered all over the globe. WWF is, or has recently been, working with indigenous peoples in all regions of the world: in Europe, Latin America, North America, Asia, the Pacific, and Africa.

WWF's views on the relationship between indigenous peoples and modern conservation have been touched upon in several of our recent publications. As a result of its central role in discussing indigenous peoples issues at the IV World Congress on National Parks and

Protected Areas, WWF published the book The Law of the Mother, edited by Elizabeth Kemf, which collects and analyses experiences at the interface between indigenous peoples and conservation, including several project sites where WWF has been involved. In publications like Conservation with People and Forests For Life, WWF has expressed its conviction that indigenous peoples are crucial actors in conservation. Together with IUCN and UNEP, in Caring for the Earth WWF acknowledged the need for recognition "of the aboriginal rights of indigenous peoples to their lands and resources ... and to participate effectively in decisions affecting their lands and resources".

Despite this history, the statement which follows represents WWF's first attempt to enunciate a broad policy to guide its work. It has been prepared following extensive consultation throughout the WWF network, which has an institutional presence in more than 50 countries. Building consensus on an emotive and politically sensitive topic is far from easy; moreover, there is a great diversity of national and regional situations in countries where WWF is active. The statement is our current best effort, but there may remain certain issues on which full consensus has still to be built. The interpretation and application of the statement may thus need to be adapted according to each national context. These variations must be interpreted as an expression of the diversity of circumstances within and outside the organization. From time to time, as WWF learns more about the topic, the statement may be updated to incorporate new views or perspectives.

Over the coming months, WWF will be preparing guidelines to assist its Programme staff in their work as it relates to the statement. As always, the implementation of such guidelines will be determined by the twin constraints of personnel and funds.

We believe the statement is a far-sighted step for an international organization whose mission is the conservation of nature, but we also recognize it may not be perfect to all eyes. Therefore, we would be pleased to receive comment and criticism from readers of this statement, to enable us to continue to improve our approach and contribution in this field.

Dr Claude Martin
Director General

Dr Chris Hails
Programme Director

Gland, Switzerland
22 May 1996

Indigenous Peoples[1] and Conservation: WWF Statement of Principles

Principles for partnership between WWF and indigenous peoples' organizations in conserving biodiversity within indigenous peoples' lands and territories, and in promoting sustainable use of natural resources

Preamble

1. Most of the remaining significant areas of high natural value on earth are inhabited by indigenous peoples. This testifies to the efficacy of indigenous resource management systems. Indigenous peoples and conservation organizations should be natural allies in the struggle to conserve both a healthy natural world and healthy human societies. Regrettably, the goals of conserving biodiversity and protecting and securing indigenous cultures and livelihoods have sometimes been perceived as contradictory rather than mutually reinforcing.
2. The principles for partnership outlined in this statement arise from WWF's mission to conserve biodiversity, combined with a recognition that indigenous peoples have been often stewards and protectors of nature. Their knowledge, social, and livelihood systems - their cultures - are closely attuned to the natural laws operating in local ecosystems. Unfortunately, such nature-attuned cultures have become highly vulnerable to destructive forces related to unsustainable use of resources, population expansion, and the global economy.
3. WWF recognizes that industrialized societies bear a heavy responsibility for the creation of these destructive forces. WWF believes that environmental and other non-governmental organizations, together with other institutions worldwide, should adopt strategies with indigenous peoples, both to correct the national and international political, economic, social, and legal imbalances giving rise to these destructive forces, and to address their local effects. The following principles aim to provide guidance in formulating and implementing such strategies.

I. Rights and Interests of Indigenous Peoples

4. WWF acknowledges that, without recognition of the rights of indigenous peoples, no constructive agreements can be drawn up between conservation organizations and indigenous peoples groups.
5. Since indigenous peoples are often discriminated against and politically marginalized, WWF is commited to make special efforts to respect, protect, and comply with their basic human rights and customary as well as resource rights, in the context of conservation initiatives. This includes, but is not limited to, those set out in national and international law, and in other international instruments.

   In particular, WWF fully endorses the provisions about indigenous peoples contained in the following international instruments:

   - Agenda 21
   - Convention on Biological Diversity
   - ILO Convention 169 (Convention Concerning Indigenous and Tribal Peoples in Independent Countries)[2]
   - Draft UN Declaration on the Rights of Indigenous Peoples[3]
6. WWF appreciates the enormous contributions indigenous peoples have made to the maintenance of many of the earth's most fragile ecosystems. It recognizes the importance of indigenous resource rights and knowledge for the conservation of these areas in the future.
7. WWF recognizes indigenous peoples as rightful architects of and partners for conservation and development strategies that affect their territories.

8. WWF recognizes that indigenous peoples have the rights to the lands, territories, and resources that they have traditionally owned or otherwise occupied or used, and that those rights must be recognized and effectively protected, as laid out in the ILO Convention 169.
9. WWF recognizes the right of indigenous peoples to exert control over their lands, territories, and resources, and establish on them the management and governance systems that best suit their cultures and social needs, whilst respecting national sovereignty and conforming to national conservation and development objectives.
10. WWF recognizes, respects, and promotes the collective rights of indigenous peoples to maintain and enjoy their cultural and intellectual heritage.
11. Consistent with Article 7 of the ILO Convention 169, WWF recognizes indigenous peoples' right to decide on issues such as technologies and management systems to be used on their lands, and supports their application insofar as they are environmentally sustainable and contribute to the conservation of nature.
12. WWF recognizes that indigenous peoples have the right to determine priorities and strategies for the development or use of their lands, territories, and other resources, including the right to require that States obtain their free and informed consent prior to the approval of any project affecting those lands, territories, and resources.
13. WWF recognizes and supports the rights of indigenous peoples to improve the quality of their lives, and to benefit directly and equitably from the conservation and sustainable use of natural resources within their territories.
14. In instances where multiple local groups claim rights to resources in indigenous territories, WWF recognizes the primary rights of indigenous peoples based on historical claims and long-term presence, with due regard for the rights and welfare of other legitimate stakeholders.
15. WWF respects the rights of indigenous peoples to enjoy an equitable share in any economic or other benefits realized from their intellectual property and traditional knowledge, building on the provisions of the Convention on Biological Diversity.
16. In conformity with the provisions of the ILO Convention 169, WWF recognizes the right of indigenous peoples not to be removed from the territories they occupy. Where their relocation is considered necessary as an exceptional measure, it shall take place only with their free, prior informed consent.

II. Conservation Objectives

17. At the heart of WWF's work is the belief that the earth's natural systems, resources, and life forms should be conserved for their intrinsic value and for the benefit of future generations.

    WWF bases all of its conservation work on the principles contained in its Mission statement.

    In addition, WWF fully endorses the provisions about biodiversity conservation and sustainable development contained in the following documents:

    - Agenda 21
    - Convention on Biological Diversity
    - Convention on Trade in Endangered Species of Flora and Fauna (CITES)
    - Convention on Wetlands of International Importance (Ramsar Convention)
    - Caring for the Earth
18. WWF encourages and supports ecologically sound development activities, particularly those that link conservation and human needs. WWF may choose not to support, and may actively oppose, activities it judges unsustainable from the standpoint of species or ecosystems, or which are inconsistent with WWF policies on endangered or threatened species or with international agreements protecting wildlife and other natural resources, even if those activities are carried out by indigenous communities.

19. WWF seeks out partnerships with local communities, grass roots groups, non-governmental organizations, governments, corporations, international funding institutions, and other groups, including indigenous communities and indigenous peoples' organizations, who share WWF's commitment to the following conservation objectives:
    i) Conservation of biodiversity: to conserve biological diversity at the genetic, species, and ecosystem levels; to improve knowledge and understanding of species and ecosystems; to protect endangered species of animals and plants; to maintain ecosystem functions; to maintain protected areas and improve their management.
    ii) Sustainable use of resources: to ensure that any harvest of natural resources is sustainable; to support community management of renewable resources according to subsistence and cultural needs; to use recycling methods where appropriate; to use resource-efficient methods and technologies; and to substitute non-renewable with renewable resources wherever possible.
    iii) Pollution prevention: to prevent, wherever possible, discharges of environmentally damaging substances, and ensure that products and processes are non-polluting.

III. Principles of Partnership

20. The following principles will govern: (i) WWF conservation activities within indigenous peoples' lands and territories; (ii) WWF partnerships with indigenous peoples' organizations; (iii) WWF partnerships with other organizations whose activities may impact upon indigenous peoples.
21. Whenever it promotes conservation objectives, and in the context of its involvement in conservation activities affecting indigenous peoples' lands and territories, WWF will encourage governments to "take steps as necessary ... to guarantee effective protection of [indigenous peoples'] rights of ownership and possession" of those lands and territories, as determined by the ILO Convention 169 (Art. 14).
22. Prior to initiating conservation activities in an area, WWF will exercise due diligence to:
    - seek out information about the historic claims and current exercise of customary rights of indigenous peoples in that area; and
    - inform itself about relevant constitutional provisions, legislation, and administrative practices affecting such rights and claims in the national context.
23. When WWF conservation activities impinge on areas where historic claims and/or current exercise of customary resource rights of indigenous peoples are present, WWF will assume an obligation to:
    - identify, seek out, and consult with legitimate representatives of relevant indigenous peoples' organizations at the earliest stages of programme development; and
    - provide fora for consultation between WWF and affected peoples, so that information can be shared on an ongoing basis, and problems, grievances, and disputes related to the partnership can be resolved in a timely manner.

    In addition, consistent with the relevance and significance of the proposed activities to the achievement of conservation objectives, WWF will be ready to:
    - assist indigenous peoples' organizations in the design, implementation, monitoring, and evaluation of conservation activities, and to invest in strengthening such organizations and in developing relevant human resources in the respective indigenous communities;
    - assist them in gaining access to other sources of technical and financial support to advance those development objectives that fall outside WWF's mission.
24. In instances where states or other stakeholders, including long-term residents, contest the rights of indigenous peoples, WWF will be ready to assist indigenous peoples to protect, through legally accepted mechanisms, their natural resource base, consistent with the achievement of WWF's Mission and subject to availability of resources.

25. Where the resource rights of indigenous peoples are challenged by national governments, private corporations, and/or other groups, and the defence of those rights are deemed relevant and significant to the achievement of its Mission, WWF will, in coordination and consultation with indigenous peoples' organizations and subject to availability of resources:
    - seek out and/or invest in the development of legitimate and transparent mechanisms to resolve conflicts at local, regional, national, and international levels, as appropriate;
    - seek to ensure that the primary rights and interests of indigenous peoples are well represented in such fora, including investment to inform and prepare indigenous peoples' representatives to take part in negotiations.
26. Consistent with WWF conservation priorities, WWF will promote and advocate for the implementation of Article 7 of the ILO Convention 169: "Governments shall take measures, in co-operation with the peoples concerned, to protect and preserve the environment of the territories they inhabit".
27. WWF will not promote or support, and may actively oppose, interventions which have not received the prior free and informed consent of affected indigenous communities, and/or would adversely impact - directly or indirectly - on the environment of indigenous peoples' territories, and/or would affect their rights. This includes activities such as:
    - economic or other development activities;
    - natural resources exploitation;
    - commercially oriented or academic research;
    - resettlement of indigenous communities;
    - creation of protected areas or imposition of restrictions on subsistence resource use;
    - colonization within indigenous territories.
28. With respect to the existing knowledge of indigenous communities, prior to starting work in a particular area, WWF will establish agreements with the indigenous organizations representing local communities, to ensure that they are able to fully participate in decisions about the use of knowledge acquired in or about the area they inhabit, and equitably benefit from it. These agreements will explicitly determine the ways and conditions under which WWF will be allowed to use such knowledge.
29. In the context of its partnerships with organizations other than those specifically representing the interests of indigenous peoples (including national governments, donor agencies, private corporations, and non-governmental organizations), WWF will:
    - ensure that such partnerships do not undermine, and if possible serve to actively promote, the basic human rights and customary resource rights of indigenous peoples;
    - ensure that all relevant information developed through such partnerships and accessible to WWF, is shared with the appropriate representatives of indigenous peoples;
    - ensure that any national or international advocacy or fundraising activity related to indigenous peoples will be undertaken in consultation with representatives of relevant indigenous peoples' organizations.
30. WWF recognizes that the resolution of problems related to indigenous peoples may require action in international fora, in addition to national interventions. In pursuit of the foregoing principles, and in order to enhance its own understanding of indigenous peoples' issues, and when consistent and relevant to its conservation objectives, WWF will:
    - actively seek inclusion and engagement in relevant international, as well as national fora.
    - initiate an ongoing process of dialogue with indigenous peoples' groups on the principles for partnership proposed herein.

31. WWF commits itself to promoting nationally and internationally, whenever possible and appropriate, the implementation of all of these principles in the context of conservation actions within indigenous peoples' lands and territories.
32. WWF is committed to upholding the above principles, and the spirit that informs them, to the best of its abilities.

Notes

1. In this position statement, as well as in other institutional documents, WWF refers to indigenous and tribal peoples using the definition of the ILO Convention 169. Unless explicitly said otherwise, the term “indigenous peoples” includes both concepts, “indigenous” and “tribal”.

2. Adopted by the General Conference of the International Labour Organization on 27 June 1989.

3. As adopted by the Working Group on Indigenous Populations of the Sub-Commission on Prevention of Discrimination and Protection of Minorities of the UN Commission on Human Rights, at its eleventh session (UN document E/CN.4/Sub.2/1993/29, Annex I).

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