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Policy Matters

IUCN Commission on Environmental, Economic & Social Policy

History, Culture & Conservation





WAMIP

World Alliance of Mobile Indigenous Peoples

WAMIP is a global alliance of indigenous peoples and communities practicing various forms of mobility as a livelihood strategy. For them, mobility is the foundation of cultural identity and a way to interact with natural resources sustainably—enriching, rather than diminishing—their abundance and diversity. The mission of **WAMIP** is the maintenance of this form of mobility so to the autonomy, overall well being peoples.



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WAMIP has a membership.

members are traditional groupings of indigenous mobile peoples (tribes, sub-tribes, clans, etc.) as defined in their own culture. The **supporting members** are individuals and organisations, for instance environment or human rights NGOs, with interest in and concern for the mission of the Alliance.

WAMIP has already received an encouraging recognition: the 2004 Darrell Posey Fellowship for Ethnoecology and Traditional Resource Rights. For more information on **WAMIP** please visit:

<http://www.iucn.org/themes/ceesp/WAMIP.htm>

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LETTER FROM THE CHAIR OF CEESP

M Taghi Farvar

Dear CEESP members and partners,

Once again, after Policy Matters No. 10 on *Sustainable Livelihoods and Co-management of Natural Resources* (2002) and no. 12 on *Community Empowerment for Conservation* (2003), we are going to print with a special issue of our Journal edited by the CMWG Chair and colleagues. The subject of this issue— *History, culture and conservation*— is a formidable one, and I must commend all the members and partners who have produced the engrossing papers collected here.

I am proud to see that our Journal continues to be a forum where we explore and debate relatively innovative subjects within IUCN. Indeed, it is part of the philosophy and mandate of our Commission to stimulate the attention of the Union on important subjects that, for one reason or another, may not be enjoying a spotlight at a particular moment in time. This does not mean, however, that they are not of momentous consequences for conservation... as you can easily find out by going through this volume.

Let me point your attention to the contacts details of the CEESP members and partners who generously shared their thoughts with all of us by compiling and offering the papers collected here. I hope there will be exchanges among many of them and you, the readers, and fruitful collaboration in the field. Indeed, if history and culture vis-à-vis conservation are not new subjects, much is still to be learned to unfold all their potential and many pathways for action are pointed at here.

This issue is being prepared for the 3d World Conservation Congress in Bangkok (Thailand) November 2004. We hope it will contribute to highlighting there the benefits of an approach to conservation that is history and culture conscious. And we hope that, in the months to follow, such an approach will also be promoted and sustained meaningfully in the field. I am proud to say that CEESP is committed to the theme of "Culture and Conservation" as a part of its new mandate. Warm wishes to all the readers!



Taking history and culture seriously

Conservation constituencies increasingly need to confront the history of “nature” and a variety of local cultural practices and rights. In the so-called global North, historically marginalised groups won at least some of their struggles and can today speak their concerns loud and clear. The same cannot be said for the so-called global South. The shouts of traditional pastoralists in Burkina Faso confronted with a protected area that curtails their historical grazing rights... do not yet ring quite as loud as the shouts of a group of Colorado ranchers denied access to public land. For how long, however?

In this issue of Policy Matters we collected papers that deal with the interplay among history, culture and conservation. We have several examples from the South and a few—quite revealing ones—from the North. In both cases, it is striking to read about the powerful ties between biodiversity and people, and we can appreciate the intelligence and craftiness that support those ties. Also striking, however, is how widespread insensitivity to social concerns in conservation still is, and insensitivity to cultural concerns in particular. There are some distinctions to be made between the South and the North. As discussed in Section IV (Understanding and measuring bio-cultural diversity), the areas in the South with the largest concentration of biodiversity are also endowed with a rich cultural diversity. We’d miss a major element, however, if we did not take note that they are also the areas endowed with a colonial past, where people have been historically disenfranchised and marginalised. This oppression has shaped, modified and often impoverished what we call their “cultures” today. After all, culture is a product of history. And, for that matter, contemporary history is busy at work in front of our eyes, affecting the North and the South alike with its enormous power of flattening and homogenizing differences...

In some circles it has almost become passé to point out that conservation agencies ignore history and culture at their peril. Ignoring local practices, institutions and knowledge systems seems only too clearly a way to waste precious resources and generate local opposition. For many it is obvious that conventional, bureaucratic, institution-driven conservation practices serve neither the interest of biodiversity nor those of communities. Yet, it is exactly those types of practices that continue to be promoted in the field. And the philosophy behind this continues to be forcefully expressed at

international meetings and in professional debates and literature: “...the protection of parks *requires* a top down approach.”¹ “Let us not ‘politicise’ conservation!”,² “We need impartial research and detached scepticism, not advocacy!”³

Why so much resistance to embedding conservation in history, culture and social concerns? Why so little attention to people? Why so little research and action about the fundamental links between nature and livelihoods, systems of knowledge and values, languages, and habits? Part of the explanation has to do with the plurality, ebullience and ‘messiness’ of people’s ways, and with the fact that cultural diversity is, by its own nature, difficult to control. The politics of knowledge has created neat compartments, consolidated though time by the power of money. The dominant development discourse has separated biodiversity from people and cultural diversity in universities, research institutions, literature and the popular media, and made the separation appear “natural” and respectable to most of us. From that, it follows that physical barriers, commercialisation and disneyfication of nature are also natural and acceptable. “Culture” is appreciated as a side dish of the “big five”⁴ (...at the end of the jeep wildlife tour you can stop and get a picture of the jumping Maasai...).

But there is more. The social sciences, which could attempt to cast a critical look upon processes of destruction in the name of conservation, are controversial in different ways with respect to the physical and biological sciences. They are easily misunderstood and labelled as troublesome and ineffectual. In addition, too large a number of social scientists employed in conservation initiatives have demonstrated myopic vision and accepted to play marginal and ineffectual roles. For decades they have confined themselves to administering questionnaires to “extract” information from people or been content with tinkering at the fringes of large projects, taking on “environmental education” roles. Few have had the resolve to say that the emperor has no clothes, that conservation projects can hurt, that they can trample upon rights, generate poverty, shatter cultural identities.⁵ Few have made it clear that conservation initiatives that do not place people, history and culture *at their core* are doomed to resort to violence or fail.⁶

Not many may have said it, but this is what is happening. For those who perceive biodiversity as *one* with cultural diversity and livelihoods it is painful to see how

that unity is still being trampled upon in many places. So, what to do? Give up? Resign ourselves? Accept the "inevitable"? The papers collected in this issue give us a glimpse of alternatives to all that. In section I (Conservation as cultural and political practice), MacDonald begins by illustrating how conservation is built through interactions among disparate cultural groups endowed with unequal powers. As conservation organisations are bodies with the explicit or implicit aim of determining cultural change, the question arises: do these bodies really understand "culture"? And who is watching over their cultural engineering? The papers by Barthod, Coggins, Andersson and Adams offer some vistas of conservation as a historical phenomenon and of how misunderstanding change results in conflict and conservation failures. And finding out the reasons why some of our forefathers engaged in conservation may embarrass more than a few of today's environmentalists. We then hear about the long-term processes by which people adapted to environmental conditions and developed their cultural identity... and how quickly these elaborate interplays are destabilised or destroyed today (Ganya *et al.*, Mayr and Rodriguez, Pinto da Silva). But "culture" is resilient! Dutt and Warren show us how groups and individuals can re-invent themselves and discover new pathways to conservation and livelihoods. And Manspeizer, Sundberg and Wolmer powerfully argue that politics is at the heart of it all. Conservation is a practice of power—a fact that they explore in various nuanced ways.

In section II (A cultural approach to conservation?) we offer some specific cases and explore more explicitly the questions that arise when conservation attempts to adopt a "cultural approach". What should we look for? What should we try to understand? What should we do? What have we learned? Different answers are proposed by papers that deal with the USA, Senegal, Tanzania, India, Canada, Indonesia and Madagascar. Different perspectives give us accounts focusing on indigenous rights, the project-based application of social research, the prevention of human-wildlife conflicts or the re-invention of traditional norms into today's societies. In all cases, we are made amply aware of the senselessness of pursuing conservation without a sufficient understanding of history and culture... As stressed by Maffi and other authors in Section IV, we are dealing with complex and inter-linked bio-cultural phenomena, and the time is ripe to understand them better and to apply that understanding in the practice of conservation.



Pride of one own's way. An essential ingredient in bio-cultural conservation. (Courtesy Grazia Borrini-Feyerabend—portrait of a girl from Mondoro, Mali)

As the international policy arena changes to incorporate concepts of cultural rights, as some formerly marginalised groups claim increasing power and as others feel even more marginalised, the credibility of the conservation movement depends on its ability to deal with the relation between history, culture and conservation in all its complexity and beyond the clichés. It is our hope that this issue of *Policy Matters* contributes to this goal.

Grazia Borrini-Feyerabend, Ken MacDonald and Luisa Maffi

The Editors can be reached at gbf@cenesta.org; kmacd@utsc.utoronto.ca and maffi@terralingua.org. They would like to express their sincere thanks to Olivier Hamerlynck, Jean Larivière and Gonzalo Oviedo for their most kind help in reading and commenting some of the papers in this special issue. Many thanks also to Jeyran Farvar (jeyran@cenesta.org) who kindly took care of art work and layout.

Notes

- 1 J. Terborgh, *Requiem for Nature*, 1999 (emphasis added).
- 2 Richard Leakey, *World Parks Congress*, September 2003.
- 3 Steven E. Sanderson, President of Wildlife Conservation Society, summarised from an e-mail discussion, 2004..
- 4 Safari operators sell tourist trips to visit the "big five" (elephant, rhino, lion, leopard, buffalo).
- 5 Among them we salute F. Berkes, S. Brechin, M. Cernea, T. Farvar, M. Gadgil, D. Harmon, J. McNeely, D. Pitt, D. Posey, S. Stevens and P.C. West.
- 6 Among such few are M. Pimbert and K. Ghimire.

Conservation as Cultural and Political Practice

Kenneth Iain MacDonald

Thirty-three years ago the Evangelical Sisters of Mary, a Catholic order in Phoenix, Arizona, donated three plaques to the Grand Canyon National Park. These plaques quoted Biblical psalms extolling the glory of God and his creations including, presumably, the Grand Canyon. For three decades, they hung outside the gift shop and on a lookout tower overlooking the south rim of the canyon. In 2003, however, a park visitor approached the American Civil Liberties Union, which subsequently queried the Park Service about the constitutional appropriateness of the plaques and they were taken down. A protest emerged from the Christian right, including so-called 'creation scientists', and the plaques were re-hung. The Park Service is currently awaiting a decision from

funding and consequent neglect of Grand Canyon National Park, this 'non-natural' issue marks the greatest public attention that this World Heritage Site has received in years. It reveals the ways in which 'nature' is a contested cultural product—an outcome of people's beliefs and values. But it also exposes the ways in which 'real nature'—the biophysical relations that underlie the superimposed meaning of nature—are subject to cultural struggles. For years, congressional appropriations for national parks—the money that guides conservation management and research – have varied with the need of particular representatives to appeal to constituencies whose beliefs about nature collide. Conservation, as ideology, practice, and outcome, is deeply embedded in these cultural struggles. It cannot escape the institutional realities which gave it birth. This is true not just in the United States, but in any society, within any cultural group. What people take to be 'nature' or 'natural', the elements of nature that people deem worthy of protection, and the forms that protection take are all dynamic outcomes of experience *and* cultural political struggles, wherever they occur.¹

In this paper, I examine what we might call the 'culture wars' surrounding conservation. In doing so I have a number of objectives:

- to consider the utility of the culture concept in rethinking what we mean by conservation and how it is practiced;
- to provide a brief survey of the use of culture in literature related to conservation; and
- to illustrate a rationale for adopting a more focused and nuanced treatment of culture in conservation research and, accordingly, practice.



Figure 1. Tourists in Grand Canyon National Park. Cultural interpretation affects conservation policy and practice (Courtesy Kenneth Iain MacDonald).

the Department of Justice before taking any further action.

While this debate may seem trivial and local, it is anything but. Despite decades of under-

The Culture/Nature Wars

Last year's meeting of the World Parks Congress revealed continuing schisms in the conservation 'community' between those

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who seek to address the social and cultural issues raised by historical conservation practice, and those who feel that this compromises the focus on 'conservation science' that should underlie all conservation practice, and detracts from the primary 'protectionist' mission of conservation. This divide is likely too neat, but it does reflect positions that stem from different philosophical perspectives on the

constitution of nature: one grounded in realism that derives from knowledge produced through rationalist science and interprets nature as an objective reality. The other is grounded in constructionism and, while not denying the objective reality of biophysical interactions that produce, in part, what most of us call nature, asserts that human communities assign meaning to those biophysical interactions, through cultural processes.² Nature in this view is as much a cultural product as an objective reality and must be understood as such if conservation practice is to be effective without exercising oppressive domination. Not surprisingly, these two perspectives contribute to different political ends and different mechanisms for getting there. But what is important to the study of conservation is that analysts begin to explore and explain the cultural processes that produce and regulate environmental knowledge and consequent conservation practice in a plurality of social, political and economic contexts, including social formations that typically escape analysis such as government departments and conservation NGOs.

Why culture?

Despite different perspectives on the constitution of 'nature' there is a growing focus among conservation practitioners on the need to consider 'culture' in the formulation of conservation policy and programming.

This derives from (at least) three perspectives. First, culture is being forced onto the conservation agenda by groups who are finally attaining the power and voice to express their discontent with historical practices that have engendered feelings of exclusion, dispossession and alienation. The focus on culture also derives from an expectation that it can reveal the multiple understandings of and interest in nature and, perhaps more importantly, move beyond the stereotypes that conjure up images of Third World populations whose only interest in nature is to provide for subsistence and development.³ In addition, attention to the cultures of conservation can contribute to understanding the place of 'nature' in social and cultural histories and in contemporary politics, helping us to understand the sources of conflict and contestation that surrounds so much conservation practice. It is also important to recognise that attention to cultures of conservation requires an opening up of the concept of culture

to transformative dialogue, opposition and collaboration. This requires not only talking about the cultural assumptions and practices involved in conservation but about the cultural claims surrounding conservation practice. These require a treatment of culture as dynamic and strategic, rather than as something absolute and static as it is so often represented in the literature of conservation practice.⁴

Rarely, do project proposals or conservation planning engage in cultural analyses of conservation practice, or even bother to define or describe the constitution of culture.

Rarely, however do project proposals or conservation planning documents engage in sophisticated cultural analyses of conservation practice, or even bother to define or

describe the constitution of culture. Failing to address this complexity leaves 'culture' as a catch-all term, subject to easy dismissal by those who would make the distinction between culture and science, or culture and nature—distinctions all too readily made in the world of modernist conservation, as if science and nature are the stuff of objective reality unaffected by the shared systems of knowledge, communication and practice (*i.e.*, culture) from which they have emerged.⁵

This brief critique of the deployment of culture in conservation is not meant to suggest that cultural concerns are unimportant in the design and implementation of conservation practice or that they are too diffuse to identify and analyse. On the contrary, my point is that considerations of culture need to be much more specific in their definitions and analyses in order to demonstrate the direct relevance of culture to achieving (or failing to achieve) the ends of conservation. In many ways culture has become a term not unlike development or sustainability. Used to avoid the need to attend to the specifics of context, it relays a vagueness that can lead to operational paralysis. It also indicates a failure on the part of modernist conservation to treat 'culture' seriously. This failure has a number of dimensions and sources. One is certainly the dominance of a rationalist scientific perspective within conservation organisations that is dismissive of the importance of culture in understanding human-environment interactions. This is compounded by the failure of the conservation establishment to reflect on their own institutional cultures and histories, to critically evaluate their modes of knowledge production, and to take ownership of the oppressive acts committed in the name of conservation.⁶ One outcome of this has been the simplistic treatment of culture by those doing applied conservation research. And this has been added to by the failure of academics who adhere to a complex and nuanced understanding of culture to engage with work in

the area of conservation.

Conservation as a cultural product

Culture rests on certain abilities—particularly people's capacity to think symbolically, and to use language and material products and practices to organise their lives and their environments. This understanding of 'culture' has important ramifications for understanding the politics of conservation for it means that what counts as 'nature' and 'the natural'—the popular objects of conservation—are culturally defined and not static.

Rather they are dynamic, and appropriate attitudes and behaviour toward them are the site of constant struggle both within and between cultural groups. We cannot be distracted by the cozy invocation of consensus present in much applied conservation writing.

We cannot be distracted by the cozy invocation of consensus present in much applied conservation writing. There are fractures and oppositions.

There are fractures and oppositions. Social and cultural contradictions exist within the whole just as they exist within the individual. In some places this is increasingly true as the global spread of particular ideologies of environment present opportunities for material gain, while challenging existing cultural knowledge systems.⁷

Such an understanding of culture leads to a consideration not simply of the ways in which conservation is practiced by distinct cultural groups, but to an understanding of conservation as a cultural product; as deriving from a system of beliefs and values symbolically expressed within particular knowledge systems that relate to particular patterns of behaviour and practice, all of which are contested. When we understand conservation from this perspective, we can begin to acknowledge it as a cultural phenomenon not simply in the so-called Third World but also in places – like Europe and North America - where, based on self-representations, 'subjective culture' would seem to

have been replaced by 'objective rationalism'. We can understand the ways in which environmental behaviour is grounded in particular structures of knowledge (e.g., rationalist, indigenous), expressed through dominant modes of communication (conversation, media), codified (formally and informally) in societal institutions (religion, law), which structure practice (tradition). We can also appreciate how these differ within and between cultural groups and perhaps most importantly, the role they play in contributing to identity; how they help to tell people who they are. To say that something is cultural, is to observe the effect of this interplay. But it is not to say that something is uniform, homogeneous or unchanging.

This starting point implies much for applied research seeking to understand relations between culture and practice. On the one hand, it does point out the need to be contextually specific and to remain cautious of the abstracting potential of managerial language such as 'best practice'. On the other, it also points to the need for the detailed, intensive, and long-term collection of ethnographic data in a variety of contexts.

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Unfortunately, little work of this nature exists. Rarely, cultural systems are analysed and appreciated in their dynamic nature; in the way in which they change through processes of transcultural interaction and give rise to, and are structured within, relations of power. While studies have addressed some of these components, few have taken a comprehensive systematic approach to

addressing conservation as a cultural product. What is more common are studies that attempt to relate conservation to a particular

aspect of culture. A partial synopsis of this work is provided below:

Conservation and knowledge systems—

Since the early 1980s an almost overwhelming amount of literature focused on what are variously termed indigenous knowledge traditional ecological knowledge, or local knowledge. The beginnings of this can be located in the work of David Brokensha⁸ and Paul Richards.⁹ This early work laid out detailed procedures for investigating contextualised knowledge systems and contributed to an understanding of localised conservation processes. Investigating the knowledge structures of small-scale societies allowed these groups to be seen as active decision-makers and knowledgeable actors, motivated but not determined by cultural values, economic goals, or unpredictable events. Such societies actively and creatively shape their surroundings—sometimes experimentally—and when confronted with the results or consequences of their own work, decide autonomously how and when to react. There is little doubt that so-called local people have significant knowledge of ecological dynamics and diversity that can contribute to the promotion of conservation goals, but there is no reason to believe that such knowledge indicates a uniform willingness to maintain resource uses that are consistent with the goals of conservation organisations.¹⁰ Unfortunately, however, knowledge studies in the realm of conservation have often been simplified and romanticised through activist promotion of an indigenous politics.¹¹ This has resulted in a two-tiered approach to local knowledge – one of which pays attention to the complexities and subtleties of knowledge systems and appreciates how knowledge is dynamic and changes through processes of interaction, and another that simplifies these complexities.

Unfortunately, applied conservation studies on local knowledge have been dominated by an approach based on documenting modes

of classification and categorisation rather than knowledge of ecological processes and dynamics and connections between these and forms of social structure and social organisation, language, the emergence of economic structures and systems of livelihoods. What this means is that there is rarely a connection made between systems or structures of knowledge and practice. Yet, it is particularly important to make this connection because practice can be constrained through a variety of mechanisms in ways that knowledge is not. What people *know* and *say* does not necessarily translate into what people can do or enact. More importantly there has been a failure to subject all communities involved in conservation to similar modes of investigation. While so-called indigenous or traditional societies have been the subject of studies, conservation organisations have rarely been the subject of research designed to investigate how they produce and act upon environmental knowledge.¹² Given the power of such organisations to transform material environments, this is a serious oversight that needs to be addressed. Unfortunately, given the power of such organisations, they are better able to escape (or control) the scrutiny of researchers than so-called traditional or indigenous communities.¹³

Conservation, values, and beliefs— Any understanding of the relations between culture and conservation must begin from an appreciation of the ways in which systems of beliefs and values, derived in part through experience and expressed in terms of knowledge, not only act to produce conceptions of nature but contribute to dominant modes of environmental behaviour.^{xiv} A large body of work has addressed the cultural bases of different understandings of the environment. Few, however, have explicitly or sufficiently addressed connections between conceptions of nature, the role of humans in 'nature', and conservation practice. Where studies do attempt to do this, they focus on the concept of environmental

ethics.¹⁵ An ethic can be defined as a set of guidelines or principles, derived from beliefs and values, meant to govern social behaviour. But to make the connection between the realms of belief/values, principles and practice, it is important to understand the dialectical relations between them. Rarely do studies assigning a conservation ethos to a 'culture' or group of practices provide a detailed analysis and explication of this relationship. There is no shortage of descriptions of religious belief systems, the ideal values they underpin, and modes of environmental behaviour.¹⁶ Often these make the point that religious beliefs or cosmologies have a significant impact on human-environment relations, underpinning practices with conservation outcomes such as sacred groves and taboos.¹⁷ But they are typically not accompanied by discussions of value hierarchies, mechanisms for the resolution of value conflicts (the traditional role of ethics) and detailed descriptions of ethical deliberation in relation to environmental considerations (*e.g.*, conservation practice). Rarer still are considerations of the values, beliefs and ethics espoused by conservation bodies and the implications of the bureaucratic capture of the movement and the growing corporate outlook of the conservation establishment.¹⁸

Conservation and identity— Much anthropological research has documented the role of nature in the symbolism of identity, often focusing on totemic symbols commonly associated with small-scale hunter gatherers or pastoral clans. Elements of nature are also used as collective identifiers of modern nation states and an important marker of cultural identity within those political formations.¹⁹ It is apparent within all of these contexts, however, that symbolism does not translate into a political commitment to conservation practice.²⁰ And we should not expect it to if we understand symbols to be signs with no necessary connection to the objects they signify. This is often overlooked in work that attempts to

draw a connection between the presence of a natural symbol within societies and consequent attitudes of 'respect for nature'.²¹ Yet, anthropologists have argued that in small-scale face-to-face cultures, the rationale for choosing biotic and landscape phenomena as markers of identity are important.²² Social groups identify with a particular plant or animal that is believed to bear ancestral relations to the clan or individuals within a social group, in part because the notion of a relationship of descent from a tangible part of their environment has a clear logic. While this may provide a protectionist attitude toward particular species, this is by no means universal and does not necessarily extend to other species or ecoregions as a whole.²³ And rarely has the meaning of particular species within specific belief systems and the connection between the symbolism and practice regarding particular species been investigated in detail. Some

...little emphasis has been placed on identifying or understanding 'conservation' as a dominant frame for identity production...

authors have pointed out the potential value of such systems of symbols in promoting conservation within local cultural contexts, but once again it is particularly important to separate ideals of a cultural system from actuality, in which the ideals, perhaps expressed symbolically, do not necessarily translate into practice (at least for a majority of a population).²⁴

Whereas environmental relations play a significant role in the formation of cultural identity, little emphasis has been placed on identifying or understanding 'conservation' as a dominant frame for identity production, and even less on the relations between identity and action.²⁵ Yet conservation has obviously become such a frame for a number of groups around the world who seek to define themselves as conservationists in efforts to ward off the efforts of states or NGOs to appropriate their lands or limit their access rights in the name of conservation.²⁶ Cultural identity, however, also has more pragmatic applications within conservation, particularly as it is increasingly dominated by bureaucratic managerial logics. These treat culture as an instrument— a mechanism through which the goals of conservation can be achieved, rather than the basis for reflecting on the legitimacy of those goals. Bowen-Jones and Entwistle provide a

classic example of such strategies. Seeking to maintain the mobilizing capacity of flagship species to raise conservation funds, they suggest using local cultural criteria as a way to select flagship species that have both local



Figure 2 and 3. A symbolic reverence for Ibex as the animist spirits of fertility in the Karakoram Mountains does not necessarily translate to treatment of the Himalayan Brown Bear (Courtesy Kenneth Iain MacDonald).



and international appeal. They suggest selecting an endemic species and directly engaging in the production of a cultural identity that is attached to a local place as the unique habitat area of that species. In

...bureaucratic managerial logic treats culture as an instrument—a mechanism through which the goals of conservation can be achieved, rather than the basis for reflecting on the legitimacy of those goals

doing so they seek to mobilise 'culture' in support of extant conservation goals.²⁷

Conservation and language— Over the past 15 years, a body of research has emerged asserting that knowledge about how to maintain biodiversity is encoded in small lan-

guages because it is their speakers who live in the world's most biologically (and linguistically) diverse areas.²⁸ Some of this work has used simple measures of linguistic and biological diversity to establish correlations between high numbers of endemic languages and endemic species. David Harmon, for example, has established a correlation between biological and linguistic diversity by comparing simple measures of endemism of languages and higher vertebrates (mammals, birds, reptiles and amphibians), with the top 25 countries for each type and noted a significant co-presence of linguistic diversity and biodiversity within these political units.²⁹ Of course, there are any number of possible (and multiple) explanations for this result. But these data point to a need to understand the connection between knowledge structures and language to fully comprehend the existence of any relation between linguistic diversity and biological diversity.

Conservation and social institutions— Ethics and spiritual values may inculcate a respect for particular species, but conservation is grounded in elaborate sets of social institutions including structures that govern access and discourage irresponsible behaviour that threatens community security

through threatening its livelihood base.³⁰ Much research has focused on how such institutions have adapted to altered environmental conditions but found it difficult to adapt to a usurping of local authority by colonial and nation-state administrations.³¹ Perhaps the greatest research focus connecting conservation to cultural practice has been in the form of ethnographic studies of social institutions responsible for research management institutions. This literature comes from a diverse area including studies (too numerous to list here) of property regimes (common and private), and political ecological relations.³² The most sophisticated of these studies are cautious in their evaluation of the conservation benefits derived from so-called 'traditional' institutions, pointing out the ways in which institutions alter in both their functioning, goals and capacities as they are drawn into more extensive economic, political and social contexts. They also point out, however, that practice does not occur outside of an institutional context and that understandings of the conservation benefits (or detriments) of specific practices are directly related to institutional functioning. In any cultural

analysis, the functioning of these institutions at any point in time needs to be understood in relation to values and beliefs, structures of knowledge and how these are altered as they experience processes of ideological domination in relation to a broader societal context (*e.g.*, how localised understandings of, and relations to, 'environment' are altered through programs or environmental education programmes sponsored by large conservation NGOs).³³ But they also help us to comprehend arbitrary distinctions, grounded in perceptions of modernity and tradition, between management regimes. For example, we speak of policy decisions of government agencies (*e.g.*, in the regulation

Is policy simply the purview of the state? Presumably not. Other institutions of authority, in different political contexts, establish policy, even if it goes by other names.

of fisheries resources in Canada), but not of policy decisions of village headmen (e.g., the decision to impose a hunting ban in African villages) and this distinction raises an important question for conservation practitioners: Is policy simply the purview of the state? Presumably not. Other institutions of authority, in different political contexts, establish policy, even if it goes by other names. And its effect is the same: to govern mechanisms of acceptable practice and to monitor and regulate the effect of the object of that practice (e.g., wild fauna and flora). Often these structures of policy-making and their effects conflict.³⁴ But what is important in understanding the relation between culture and conservation is to look 'underneath' or 'behind' policy, as it were, and to decode what the processes of establishing policy, the content of that policy (read custom, tradition, innovation, etc.), and the conflicts surrounding policy formation and implementation tell us about authority, belief, value, meaning, power in any given context. What this means in analytical terms is that we can look at so-called environmental crises such as the near extinction of North Atlantic Cod or more localised concerns such as conflicts between the historical residents of land designated as a protected area and new bureaucratic management authorities as cultural phenomena; as the result of historical cultural practices that reflect the accumulated beliefs and values of a dominant element (dominant in an ideological rather than demographic sense) of society through time. This does not mean that these practices are uncontested but that they did derive from what are generally considered to be appropriate mechanisms of governance, including the setting of policy and the making of decisions by 'policy-makers', who operate in accordance with norms or customs. These might include household heads, village elders, civil servants, or federal politicians.

Conservation and practice— The above discussion converges on practice, for it is only through the long term observation of practice that we can understand the dimensions of any relationship between culture and conservation (defined both as an end and a process).³⁵ To understand the relations between environmental beliefs, knowledge, sanctioning authority and conservation we need to be able to observe practice and the effects of practice on environmental quality.³⁶ Many have pointed to traditional practice as indications of the conservationist tendencies of small-scale societies.³⁷ While there is much to be learned from this work, we must be cautious of the romanticizing tendencies of the 'tradition concept'.³⁸ Tradition, as with other dimensions of culture, needs to be defined, monitored and enforced, and this occurs within the dynamics of power relations and changing environmental conditions. Tradition, contrary to modernity theory, is *dynamic*, and must be interpreted not simply through oral assertions but through observed practice. Too often applied conservation research treats not only 'culture' but 'tradition' as static and unproblematically uniform across particular social groups.

Tradition, as with other dimensions of culture, needs to be defined, monitored and enforced, and this occurs within the dynamics of power relations and changing environmental conditions

Conservation, culture and power— My final point in this section relates to the need to consider conservation through a lens of cultural politics. Increasingly, historical studies reveal conservation practice to be grounded in the history of domination that have seen the rise of the postcolonial state and the dominance of an ideological perspective on development that contributed to dispossession, the alienation of peoples from their land and resources, the assertion of the moral and intellectual superiority of particular belief systems and the consequent implementation of particular practices that reflect

assertions of cultural and racial hierarchies.³⁹ But the fact that 'culture' has now become a focus of positive concern within conservation practice, highlights the dynamic quality of 'culture' and emphasises the importance of understanding 'culture' itself

in seeking to comprehend relations between culture and conservation we need to consider the complicity of local agents with state and NGO programs and agendas.

as a phenomenon that requires the consistent reproduction of identity formations, through the assertion of meaning, language, normative behaviour, appropriate belief.⁴⁰ Culture requires subjects and subjects require formation. It is this requirement of constant reproduction and the constant formation of new cultural subjects that provides

the basis for ideological competition. Culture is not primordial. It is not static. It is not absolute. It is both the mechanism and the outcome of a process that involves the production of meaning, the transmission of meaning, the definition of appropriate beliefs and behaviour, and the surveillance and enforcement of social formations. This means that certain cultural forms and practices will assume dominance in relation to the power of particular individuals and groups to produce and circulate knowledge, and achieve ideological domination (conservation organisations, practitioners and researchers among them). Culture, then, is always a site of political struggle, pointing out the pluralism and instability of 'local cultures'. Conservation practitioners, organisations and researchers need to engage reflectively with their own role in this struggle for, as much as they may desire order, coherence and stability within culture, this is not 'natural'.⁴¹ It is produced and maintained and increasingly derives from the practices of states or other large scale organisations. Increasingly the most isolated locales are affected, and perhaps even constituted, by power and influence flowing from dominant centers and institutions.⁴² Accordingly, in seeking to comprehend relations between

culture and conservation we need to consider the complicity of local agents with state and NGO programs and agendas.

Conclusion

To address the problems of contemporary conservation, state agencies and conservation NGOs will need to apply much more effort to understanding conservation in practice as the outcome of interactions between disparate cultural groups, often in radically inequitable power relations. And they will need to take this knowledge and apply it to the design and implementation of future conservation planning. It is no longer good enough to accept the assertion of an intellectual and technical superiority when the agendas of institutional conservation are politically and economically skewed to match the priorities of their donors. When project proposals are written to address the stringencies of, for example, the GEF at the expense of the contextual socio-environmental realities of the project area, long-term conservation will not be achieved.

Recent reviews point to a diminishing institutional resistance to incorporating cultural considerations within conservation planning.⁴³ But they also highlight the inadequacies of current research and point to the need for more comprehensive research focused on understanding the relations between culture and conservation. Too often, the conservation effects of sacred space or taboos are listed as an afterthought in research reports. But more than simply an emphasis on cultural practice, research is needed that addresses the institutional context of conservation outcomes wherever they are found. How are use or access regulations codified (orally or textually)? What sanctions are imposed for breach? Who is responsible for imposing sanction? What is the utility of sanction? How do cultural norms operate to support conservation practice? How are cultural meanings applied to explanations of environmental degradation? How is this responded to by relevant

institutions?

This institutional context of changing human-environment relations is poorly understood. In many ways, the fault for this

conservation is inextricably bound to culture both as a process and a product.... So long as... we will be left to read between the lines, take work out of context and reach speculative conclusions... modernist conservation practice will continue to fall far short of its objectives.

lies with conservation organisations themselves which have explicitly or implicitly set out to alter human-environment relations, introduce directed cultural change and introduce new ideologies of nature. Rarely, however, do they effectively trace how localised institutions respond to these programmatic intentions (e.g., How have beliefs changed? How has this affected localised ecological practice?). Monitoring and evaluation exercises are more often

tailored toward the interests of donor agencies than designed as long-term projects meant to assess the complex outcome of integrated conservation projects. Research funds to accomplish such work are also in short supply. There are any number of reasons for this: a crisis atmosphere surrounding conservation directs most funding to so-called applied projects; competition between conservation agencies for limited funding pushes assessment work to the background and implementation to the fore; for private foundation funding, there is greater public exposure and consequent reward in funding research that is directly related to species or habitat conservation. Providing the funding that leads to the protection of an endangered species generates much more favourable press than unearthing the relations between historical alterations to belief systems and the denigration of that habitat. Yet, as research continues to make clear, there is a need to recognise that conservation is inextricably bound to culture both as a process and a product. Conservation is cultural practice. So long as conservation is

not the explicit focus of long-term ethnographic studies, we will be left to read between the lines, to take work out of context and to reach speculative conclusions regarding relations between culture and conservation in a diversity of contexts. And so long as this research is not funded and conducted, modernist conservation practice will continue to fall far short of its objectives.

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- benefits to be had from understanding the culture of organisations (Goldman 2001).
- 7 Conklin & Graham, 1995; Ellen & Bernstein, 1994.
- 8 Brokensha, Warren and Warner, 1980.
- 9 Richards, 1985.
- 10 Conklin & Graham, 1995; Zimmerman *et al.* 2001.
- 11 Note that I am assigning this simplification to an activist community, and not to an indigenous community.
- 12 Alvesson, 1993; Walley, 2002; MacDonald, 2002.
- 13 Gezon, 2000.
- 14 Ingold, 1992.
- 15 See, for instance, Deb & Malhotra, 2001.
- 16 Posey, 1999.
- 17 See, for instance, Sharma *et al.*, 1999; Castro and Tibetts, 2001; Colding and Folke, 1997; Darlington, 1998; Hamilton, 1993; Posey 1999.
- 18 But see Jepson and Canney, 2003.
- 19 Schama, 1995.
- 20 Baker, 1993.
- 21 For an exception to this see Morris, 1995.
- 22 See, for instance, Rival, 2002; Ranger, 1999.
- 23 Johnson Gottesfeld, 1994; MacDonald, 2004.
- 24 See, for instance, Infield, 2001; Kuriyan, 2002.
- 25 Chipeniuk, 1998.
- 26 Butz, 2002; Haenn, 2002.
- 27 Bowen-Jones & Entwistle, 2002. This notion of using culture as an instrument in the service of conservation (as opposed to understanding 'culture' as a cultural product) is increasingly common within the emerging field of conservation marketing (*cf.*, Pandey 2001, Johns 2003).
- 28 Ovieda and Maffi, 2000; Skutnabb-Kangas, Maffi, & Harmon, 2003.
- 29 Harmon, 1995. See also the article by Harmon and Loh and by Maffi in this issue of Policy Matters.
- 30 Anderson, 1997.
- 31 See, for instance, Leiber, 1994; Zerner, 1994; Ehgenter, 2000; Smith & Wishnie, 2000; Lu, 2001; Colchester, 2003.
- 32 See, for instance, Ostrom, 1993.
- 33 Marks, 2001; MacDonald, 2004 (in press).
- 34 See, for instance, Lewis, 1989.
- 35 Practice is the measured expression of the relationships between the other elements of culture that I have listed here
- 36 See, for instance, Sierra, 1999.
- 37 See, for instance, Gadgil, 1992, Gadgil and Berkes, 1997.
- 38 MacDonald, 2002.
- 39 See, for instance, Grove, 1993; Neumann, 2002; Cinnamon, 2003.
- 40 See, for instance, Freeman, 1999.
- 41 Steedly, 1999.
- 42 See, for instance, Ellen & Bernstein, 1994.
- 43 Gezon, 2000; Redford and Taber, 2000; Pandey, 2003; Thomas, 2003.

Notes

- 1 See, for instance, Croll and Parkin, 1992, Ingold, 1992.
- 2 Soper, 2001
- 3 Tsing, 1999
- 4 Haenn, 2002.
- 5 Haila, 1999.
- 6 Institutional or organisational ethnography is still very much in its infancy, yet there are good examples of the

Protection de la nature et identités culturelles en France

Christian Barthod

Résumé. L'émergence d'une conception renouvelée de la protection de la nature, qui refuse désormais de limiter son champ aux seules « aires remarquables protégées » traditionnelles, a conduit l'Union européenne et l'Etat à afficher des ambitions élevées en terme de surface bien que localement modulées, mais aussi à rendre moins compréhensibles pour les communautés rurales, car moins « spectaculaires », les raisons de l'enjeu de protection. Beaucoup de tensions sont alors comprises comme un conflit entre une nouvelle culture urbaine conquérante et une culture rurale traditionnelle sur la défensive. Or l'identité culturelle forte de la France s'est construite autour d'un double schéma d'allégeance à un pouvoir central protecteur fort, mais lointain, et d'enracinement local dans des terroirs ruraux vécus comme divers et spécifiques. La défense de ce qui fait l'identité des communautés rurales fragilisées passe alors souvent par le refus des projets de protection menés localement par l'Etat. Le gestionnaire de milieux naturels doit donc apprendre à développer une « ingénierie écologique » qui intègre la dimension culturelle, sans abuser des raisonnements scientifiques et techniques dans la défense publique du projet qu'il souhaite initier. La perception partagée de la valeur utilitariste, éthique et esthétique du projet représente un enjeu majeur. Dès lors la question clé devient la prise en charge de cette valeur par les acteurs concernés, au travers d'un mode de gestion à négocier.

En France, le débat sur la protection de la nature s'est développé depuis les années 1970 dans un contexte social souvent crispé avec les gestionnaires des territoires ruraux. Mais avec le projet communautaire Natura 2000 qui a servi de révélateur, les années 1990 ont vu les tensions s'exacerber, au point d'être vécues, dans certains projets, comme un conflit entre une nouvelle culture urbaine, triomphante et conquérante, et une culture rurale traditionnelle, fragilisée et sur la défensive. Ces deux types de culture cohabitent généralement dans un même individu : les ruraux ne sont pas à l'écart des circuits moderne de formation et d'information qui façonnent un nouveau regard sur la nature, alors que les citoyens cultivent la nostalgie de racines rurales en cours d'effacement.

Au-delà de ces conflits, il se joue, à propos de la protection de la nature, quelque chose qui touche à l'identité culturelle du pays. En Europe, chaque être humain est à la fois un individu enraciné dans une histoire multi-séculaire et dans un « quelque part », un

spectateur ou acteur de l'évolution rapide d'un Etat-Nation confronté à la dynamique créée par l'intégration dans l'Union européenne, et un citoyen du monde. Ceci fait de l'identité culturelle un sujet complexe qui devient rapidement passionnel.

Le contexte national en France

La France, vieux pays d'une vieille Europe, se caractérise par une présence humaine encore relativement forte sur la quasi-totalité du territoire, bien qu'en net déclin et présentant toutes les caractéristiques d'une crise majeure du modèle traditionnel de ruralité. A la différence de beaucoup d'autres pays européens, l'identité culturelle française s'est construite autour d'un double schéma, en apparence contradictoire mais fondateur et structurant, d'allégeance à un pouvoir central protecteur puissant mais lointain, et d'enracinement local dans des terroirs ruraux vécus comme divers et spécifiques, formant la matrice d'une identité culturelle forte.

Bien que le pays se soit fortement urbanisé et industrialisé, au terme d'un long proces-



Figure 1. Paysage traditionnel dans le parc national des Pyrénées : derrière ce beau paysage bien entretenu se dissimule un équilibre rural de plus en plus fragile, mais auquel tiennent fortement les communautés rurales et les citadins (Courtoisie Parc National des Pyrénées)

sus qui s'est accéléré depuis un demi-siècle, tout ce qui touche au monde rural reste très sensible car il touche à la manière même dont les Français se perçoivent. Ce lien au monde rural se manifeste à la fois par la mémoire vivace d'un enracinement familial dans un terroir, mais aussi souvent par la médiation d'une propriété foncière résiduelle¹ encore très répandue dans les familles citadines. Cette situation est le fruit des héritages qui inscrivent le propriétaire dans une lignée, dans une histoire, dans un terroir et dans un devoir vis à vis de ses ascendants et de ses descendants.

L'attachement à cette propriété rurale est d'abord sentimental, culturel et identitaire, et secondairement économique, au travers d'une conception dure du droit de propriété, liée au droit romain et à l'héritage de la Révolution française, qui façonne l'imaginaire du citoyen républicain et l'ambivalence de ses relations à un Etat central fort.

Tant que la politique de protection de la nature a été perçue comme ne s'adressant qu'à des territoires restreints dont le caractère remarquable était facilement perceptible par tous, l'Etat a bénéficié d'un appui tacite ou explicite de l'opinion publique pour pas-

ser outre à ce qui était perçu comme des intérêts locaux égoïstes, au travers d'une démarche réglementaire dont la légitimité n'était pas contestée. Pour l'opinion publique, comme pour une partie significative des décideurs administratifs et experts scientifiques, l'enjeu était de soustraire les territoires remarquables aux menaces d'origine humaine que faisait planer l'évolution technologique, économique et démographique.

Cependant, dans des territoires qui sont marqués depuis plusieurs siècles, voire millénaires, par l'activité humaine, l'idée de gestion conservatoire s'est imposée au cours de la dernière décennie comme un outil pertinent pour maintenir ou recréer un contexte favorable à la conservation de tout ou partie des espèces et des habitats. Les conséquences en ont été d'une part d'afficher des ambitions de protection de la nature localement modulées mais globalement élevées en terme de surface, et d'autre part de rendre moins compréhensibles, car moins « spectaculaires », les raisons de cet enjeu de conservation.

Dès lors le chèque en blanc de l'opinion publique, qui avait fondé une certaine politique de l'Etat durant trois décennies n'est plus acceptable par une partie significative de la société civile qui y voit une menace pour le monde rural et pour son identité.

Dimension culturelle et identitaire de la protection de la nature

Dans les sociétés urbaines modernes, la nature accède au rang d'un objet contemplé de loin, quelle que soit la fréquentation dominicale ou estivale de certains sites particuliers. Cette confusion propre à une cul-

L'attachement à cette propriété rurale est d'abord sentimental, culturel et identitaire, et secondairement économique, au travers d'une conception dure du droit de propriété, liée au droit romain et à l'héritage de la Révolution française, qui façonne l'imaginaire du citoyen républicain et l'ambivalence de ses relations à un Etat central fort.



Figure 2. Circaète dans le parc national des Cévennes : image de la biodiversité emblématique (Courtoisie Parc National des Cévennes)

ture urbaine, qui fait de la nature largement anthropisée depuis le Néolithique en Europe occidentale et de la nature dans certaines zones peu peuplées d'Afrique, d'Amérique latine ou même d'Amérique du Nord une même et unique réalité. Cette vision rend plus difficile la perception de toute la gamme des interactions possibles, négatives mais aussi positives, entre l'homme et la nature². Néanmoins il subsiste encore dans l'imaginaire urbain une distinction entre la « campagne » (zone rurale fortement marquée par les activités agricoles) et la nature (zone rurale où les espaces non agricoles sont dominants), ce qui complique singulièrement la perception des enjeux de protection de la nature dans les zones agricoles, et symétriquement la perception de la place des activités humaines dans les zones rurales non agricoles.

Comme la période romantique, la culture occidentale dominante actuelle, d'essence citadine, propose comme mots d'ordre le sentiment, l'imagination, l'expérience personnelle irremplaçable et la nostalgie. Comme la quête éthique romantique, la quête éthique moderne semble parfois déve-

lopper une confusion entre le beau et le bien et revendiquer l'abolition de la différence entre le rêve et la réalité. Comme la culture romantique, essentiellement urbaine, la culture moderne privilégie l'individualisme et perçoit la Nature à la fois comme un tout unique et comme une source de bonheur que la vie sociale est désormais partiellement impuissante à apporter. Cette vision est bien éloignée de la tradition des populations rurales qui voyaient d'abord (mais pas exclusivement) dans la nature une source de biens et services très concrets et directement appropriables.

Entre les deux grandes visions traditionnelles de la nature, l'homme moderne, comme l'homme romantique, choisit de plus en plus la vision organiciste et répudie la vision mécaniciste. A la manière des romantiques, il cultive la nostalgie d'une nature sauvage et mystique, incarnant « l'âme du monde ». Comme l'homme romantique émergea de la « période des Lumières » du XVIII^e siècle et du règne sans partage de la raison, l'homme moderne est fils de la science triomphante des années 1945-2000 mais cherche un antidote à une vision prométhéenne de l'homme et du monde, desséchante et angoissante.

Les sociologues ne disent pas autre chose, lorsqu'ils affirment que la nature sauvage semble s'être désormais imposée dans les pays occidentaux comme la référence la mieux partagée par l'opinion publique. Les débats actuels sur la gestion durable et la biodiversité sont régulièrement mis en perspective par rapport à des modèles culturels et techniques qui revendiquent comme référence la nature sauvage, et non la nature historiquement « humanisée ». Certaines des questions majeures qui se posent

actuellement aux gestionnaires de milieux naturels doivent donc être confrontées à une grille d'analyse culturelle qui ne sous-estime pas l'univers culturel citadin dominant, sans ignorer pour autant les résistances fortes parmi les acteurs du monde rural.

Trop souvent les acteurs ruraux estiment en effet être traités a priori comme des ennemis dans les projets de protection de la nature menés par l'Etat. Certains modes de communication sur l'environnement ont en effet accrédité, bien à tort, l'idée que l'homme est l'ennemi de la nature qui doit être protégée par l'Etat. Ce schéma culpabilisant est vécu comme inadmissible par des acteurs qui pensent légitimement se situer dans une lignée séculaire solidaire qui a fortement contribué à façonner ce territoire et cette nature, qui méritent aujourd'hui d'être protégés. Il est perçu comme une prise de contrôle d'un mode rural fragile par une culture citadine triomphante. Pourtant cette nature et ces paysages témoignent souvent d'équilibres socio-techniques aujourd'hui profondément fragilisés sinon révolus.

Dans les zones rurales en difficulté, les acteurs qui restent au pays malgré un contexte économique et social souvent peu favorable, ainsi que ceux qui se veulent solidaires avec eux, s'estiment « dépositaires » de ce qui fait la richesse et la spécificité d'un terroir « humanisé » au fil des siècles. Ils vivent donc comme une injustice les discours de protection qui ne font pas une large place à l'homme, et développent dès lors une hostilité vis-à-vis d'un Etat qui ne sait pas les reconnaître. Ils perçoivent souvent l'intervention « protectrice » de l'Etat comme le « coup de grâce » à un terroir fragilisé, vis à vis duquel l'Etat n'assumerait pas son devoir de solidarité. La défense de ce qui fait leur identité passe alors souvent par le refus des projets de protection menés par l'Etat. Les conflits sont d'autant plus vifs que cette identité est vécue à la fois comme niée et agressée.

Aborder un projet public de protection dans toute sa complexité biologique et administrative sans prêter suffisamment attention à la dimension culturelle de ce qui est souvent compris, par les propriétaires concernés et par les populations locales, en terme de dépossession expose à des incompréhensions majeures, susceptibles de conduire à des rancœurs plus ou moins verbalisées, à des oppositions, voire à des conflits. Il convient donc de commencer par reconnaître publiquement la qualité biologique d'un terroir façonné par des générations d'hommes qui y ont durement travaillé, et d'introduire très tôt la référence, pour le passé et pour l'avenir, à un territoire géré.

Il faut s'appuyer sur ce qui fonde l'identité du terroir pour refuser la fatalité d'une dissolution dans une modernisation uniformi-



Figure 3. Site de la Sanguinière, dans le parc national du Mercantour : la forêt de mélèze semble naturelle et pérenne au citadin, mais la régression des pâturages d'altitude en sous-bois et le renchérissement des coûts d'exploitation du bois laissent planer une incertitude sur l'évolution du mélèzein (Courtoisie Parc National du Mercantour & Jean-Louis Cossa)

sante et sans âme. Il est ensuite possible de voir concrètement, avec les acteurs locaux, comment préserver cette richesse qui fonde simultanément l'identité d'une communauté et celle d'un terroir. Cela suppose que la politique de la protection de la nature fasse

de plus en plus appel, au côté des spécialistes des sciences de la terre et de la vie, à des sociologues-ethnologues, ainsi qu'à des médiateurs locaux, bons connaisseurs des deux cultures qui risquent de s'affronter. L'ingénierie écologique doit faire l'effort d'intégrer une dimension culturelle. C'est en partie pour cette raison que les élus locaux et régionaux se sont ainsi sentis plus à l'aise dans la politique des parcs naturels régionaux³ qu'ils ont eux-mêmes suscitée, que dans celle des parcs nationaux et des réserves nationales.

Une politique de protection de la nature menée par des pouvoirs publics sensibles aux préoccupations d'une société très majoritairement urbaine, relayées par le monde associatif, ne trouve pas nécessairement un écho profond chez les élus nationaux. De ce point de vue, il faut noter que les parlementaires français manifestent en général une attitude moins favorable que celle du public⁴. A titre d'illustration, pour préciser les priorités nationales en matière d'environnement, la protection des paysages et la sauvegarde de la faune et de la flore ne sont évoquées que par un parlementaire sur vingt⁵. Ceci explique probablement qu'historiquement la politique de protection de la nature en France est dominée par un dialogue entre l'administration et les associations de protection de la nature, plus que par une vision d'ensemble, politiquement cohérente et volontariste, des élus nationaux.

Quelques difficultés rencontrées par les politiques de protection de la nature

Les décideurs publics et les acteurs ruraux sont généralement mal à l'aise quand l'approche esthétique intervient dans un processus de prise de décision. Ils se retranchent souvent derrière des arguments rationnels qui dissimulent leur implication affective. On oublie que les premières politiques de protection de la nature ont trouvé leurs avocats dans des amoureux de la beauté des «

monuments naturels ». Certes il convient de souligner la forte dimension culturelle de l'esthétique, enracinée dans la diversité des " histoires " et des milieux physiques et biologiques qui façonnent le regard et l'expérience des hommes, diversité qui fait la richesse de l'Europe. Dans une même région, il faut également rappeler la diversité des opinions, et souvent les appréciations différentes des univers culturels citadins et ruraux. Chacun a sa propre vision de ce qu'est une " belle nature ", mais garde en mémoire ses émotions devant des animaux ou des plantes, un « coin de nature » ou un paysage. Derrière l'éthique se cache souvent l'émotion esthétique.



Figure 4. Présence du mouton dans le parc national des Pyrénées : le citadin ne perçoit plus tous les efforts qui sont mobilisés pour maintenir ce mode traditionnel d'exploitation des alpages d'altitude (Courtoisie Parc National des Pyrénées)

En effet, il est probablement nécessaire de dépasser (ce qui signifie assumer, mais aller aussi au-delà) une approche utilitariste, même rénovée, pour se situer en même temps sur le terrain d'une approche éthique. Mais il est aussi nécessaire d'assumer une approche esthétique, qui touche rapidement aux motivations profondes des individus. L'intégration de ces trois types d'approche est la première condition d'une véritable démarche patrimoniale. Pourtant bien des discours généraux sur ce terrain se heurtent à des fortes difficultés sur un projet particulier de protection de la nature, car la perception des valeurs utilitaires, éthiques et esthétiques n'est pas la même partout.

Universalisme et complexité locale

La pensée occidentale recherche l'universalisme, et l'histoire prodigieuse des sciences depuis le siècle des Lumières n'a fait que conforter cette sensibilité. Elle a développé à cet effet une véritable ascèse de l'esprit, qui a historiquement permis à l'homme de s'affranchir de la prison du particularisme local et de se doter d'outils opérationnels extraordinairement efficaces dans le domaine des « sciences dures », et raisonnablement efficaces dans le domaine des sciences humaines. Mais trop souvent cette quête respectable s'est déformée en une recherche de principes, lois et mécanismes simples, dont la validité doit s'affirmer au-delà de la diversité des lieux et des cultures.

Les esprits formés à cette discipline intellectuelle éprouvent généralement un penchant net à privilégier une approche simplificatrice, tout entière tournée vers l'action, qui regroupe toute une diversité de situations dans des catégories communes, et cherche une grille d'analyse qui s'affranchisse, autant que faire se peut, des spécificités, particularités et paramètres mal quantifiables. Dès lors une pensée qui se veut universelle rencontre souvent de graves difficultés à se confronter à la complexité locale.

Trop souvent, à partir du moment où l'argu-

mentaire politique et scientifique qui a justifié un projet de protection semble convaincant, intellectuellement fondé et reposer sur des arguments structurés, il existe un certain désarroi à constater que l'adhésion attendue n'est pas au rendez-vous. Dès lors plutôt que de reconnaître un raisonnement inadéquat à saisir la complexité locale, la facilité consiste à soupçonner ou identifier de la mauvaise foi ou des intérêts cachés. Face à ce soupçon, la pensée universaliste est presque toujours démunie et se raccroche, en désespoir de cause, à des arguments d'autorité ou à l'organisation d'un rapport de force. Parfois une telle stratégie permet de passer en force, lorsque les surfaces concernées sont faibles, mais de plus en plus souvent, et plus encore quand les surfaces en cause sont importantes au regard des acteurs concernés, elle n'aboutit qu'à organiser une confrontation où les compromis sont mal vécus par l'ensemble des parties qui s'opposent. Les tensions que suscite une action toute entière inspirée par la pensée universaliste sont exacerbées par la montée inexorable des problèmes complexes multi-acteurs qui caractérisent les débats de société relatifs au vivant.

Face à une telle situation, des penseurs français comme Henri OLLAGNON⁶ estiment que la seule option opérationnelle raisonnable consiste à déplacer le débat vers d'une part l'identification partagée de la valeur (utilitariste, éthique ou esthétique) de ce qui est à protéger par et pour les acteurs présents sur le territoire concerné, et d'autre part vers la question de la prise en charge de cette valeur par ces mêmes acteurs, au travers d'un mode de gestion à négocier. Dans un tel contexte, l'intelligence stratégique est à privilégier par rapport à l'intelligence universelle (tout en intégrant celle-ci). L'intelligence stratégique d'une situation passe nécessairement par une forte capacité à identifier ce qui fonde l'identité culturelle des actuels protagonistes et possibles futurs partenaires, voire par une certaine empathie pour la culture propre à chacune des parties

en présence.

En effet les mots n'ont pas ou plus le même sens pour tous les acteurs concernés, d'autant plus que se cache souvent sous les mots la confrontation d'une culture urbaine et d'une culture rurale. Il est dès lors urgent de négocier le contenu sémantique du projet avant que la crise n'éclate. L'expression même de protection de la nature suscite souvent dans le monde rural une incompréhension : protéger veut en effet dire implicitement protéger contre quelque chose ou quelqu'un. Si on ne précise pas ce quelque chose ou ce quelqu'un, on ne peut empêcher les acteurs ruraux traditionnels de penser qu'ils sont vus comme des agresseurs de la nature, et que les citadins, les « gens d'ailleurs », cherchent à protéger les territoires ruraux contre ceux qui y vivent et y travaillent.

Très rapidement, le débat sombre dans l'alternative manichéenne classique où chacun est sommé de choisir entre l'homme et la nature ; les protecteurs de la nature sont alors perçus comme fondamentalement hostiles à l'homme. Les ruraux se proclament souvent « espèce menacée » et refusent



Figure 5. Figure Plant d'Arnica dans le parc national du Mercantour : image de la biodiversité perçue comme utile par tous (Courtoisie Parc National du Mercantour & Gilbert Rossi)

catégoriquement ce qu'ils dénoncent comme une création de « réserves d'indiens ». Pour éviter cette incompréhension, Henri OLLAGNON et son école de stratégie patrimoniale proposent de parler en terme de « qualité d'un territoire », et en particulier de « qualité du vivant » du territoire. De fait les acteurs ruraux peuvent adhérer à la nécessité de maintenir ou restaurer un haut niveau de qualité du vivant naturel et humain sur leur territoire de vie.

La gestion patrimoniale selon Henri OLLAGNON

La question est celle du mode de réduction, légitime, de la complexité des problèmes, en prônant l'alliance d'une intelligence intuitive et d'une intelligence universaliste.

L'enjeu est de refuser aussi bien une approche de la nature en tant que « res nullius », qui fonde la croyance qu'on trouvera toujours des solutions plus tard, qu'une approche qui ne s'exprime qu'en normes et contraintes, et qui conduit les partenaires les plus proches du problème à se rebeller.

L'objectif est de susciter les conditions qui permettent une appropriation, par les partenaires potentiels identifiés, d'un patrimoine commun qui fonde l'identité de chacun dans un monde en évolution, et qu'il convient dès lors d'agir ensemble.

Le moyen est une gestion adaptative par objectif de qualité, et surtout pas une gestion fixiste qui prétend mettre en œuvre des outils valables en tous lieux et en tous temps.

La condition, dans une société de droit, est de garantir à la fois l'envie et la sécurité des acteurs, ce qui n'est possible que dans un processus qui privilégie le contrat et le suivi de la mise en œuvre de ce contrat.

Il convient de ne pas sous-estimer les difficultés d'une telle approche qui comprend:⁷

- un processus d'appropriation du territoire par les populations, qu'il faudra inviter à

exprimer leur vision de l'avenir;

- un processus de mise en évidence partagée des problèmes du territoire concerné;
- un partage des connaissances qui sous-tendent le besoin d'un projet, et en particulier les connaissances des acteurs locaux;
- la clarification par chacune des parties concernées de ce qui n'est pas négociable et de ce qui est désirable ensemble, dans un débat explicite;
- un processus participatif à caractère contractuel, nécessitant d'une réelle capacité d'animation locale et d'une médiation localement reconnue, attentive aux asymétries de pouvoir et de capacité d'argumentation;
- l'identification des marges de manœuvre, où les groupes concernés ont des options à discuter au delà de l'acceptation totale ou le refus total;
- le développement d'un « projet » cohérent, avec des objectifs et des

principes opérationnels simples.

Le vrai critère de réussite c'est la prise en charge active de la qualité du vivant par les acteurs publics et privés concernés. Obtenir une conviction et un engagement partagés suppose que la qualité du vivant soit vraiment perçue comme le patrimoine commun des acteurs qui peuvent la dégrader, et non comme un patrimoine relevant d'une collectivité lointaine plus ou moins manipulée par des groupes de pression qui, de loin, paraissent tout sauf clairs.

Conclusion

En France, la perception de la dimension culturelle des tensions et conflits autour de la protection de la nature a été lente à s'imposer. Elle explique pourtant une grande partie des tensions rencontrées durant les années 1990, lors de l'émergence d'une conception renouvelée de la protection de la nature, qui refuse désormais de limiter son ambition aux seules « aires remarquables protégées » traditionnelles. Si ces tensions et conflits sont si forts, c'est qu'ils mettent

en cause beaucoup de l'identité culturelle d'un pays comme la France, et plus encore celle des gestionnaires de ses espaces ruraux. Les dépasser suppose une grande attention aux mots, aux représentations culturelles, aux processus de prise de décision et de suivi des décisions, en revalorisant l'intelligence stratégique par rapport à l'intelligence universelle, au service de la qualité biologique des espaces ruraux. Il est urgent de déplacer le débat vers d'une part l'identification partagée de la valeur (utilitariste, éthique et esthétique) de ce qui est à protéger par et pour les acteurs présents sur le territoire concerné, et d'autre part vers la question de la



Figure 6. Site de l'Aigoual dans le parc national des Cévennes : le citadin ne perçoit plus les traces, en cours de disparition, de l'exploitation humaine qui a pourtant marqué le milieu (Courtoisie Parc National des Cévennes)

prise en charge de cette valeur par ces mêmes acteurs, au travers d'un mode de gestion à négocier. Il s'agit donc d'un changement nécessaire dans les modes de gouvernance des projets de protection et de gestion de ces territoires.

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Notes

- ¹ Elle est résiduelle au sens où 1) des urbains, par héritage, gardent la propriété d'anciennes terres agricoles

- exploitées par leurs ancêtres, sans être directement et économiquement impliquées dans la vie des communautés rurales restées au pays, 2) les liens interpersonnels avec les acteurs ruraux locaux se distendent inexorablement au fur et à mesure où les générations passent.
- ² Pour cette approche de la nature par la culture, on passera sous silence le débat légitime sur la place a priori de l'espèce humaine dans la nature.
- ³ Cf. Policy matters n°12
- ⁴ PROSES Daniel Boy, Les Parlementaires et l'environnement, Rapport de recherche, 2003, 40 p
- ⁵ Il est cependant intéressant de noter que, parmi les parlementaires, les femmes et les élus urbains manifestent une sensibilité très significativement plus forte aux questions environnementales.
- ⁶ Professeur de stratégie patrimoniale à l'Institut National Agronomique Paris-Grignon
- ⁷ Ce cahier des charges qui doit réguler la confrontation entre l'offre et la demande en matière de qualité biologique d'un territoire, doit beaucoup à John DAY (chargé de la révision des limites et du règlement du parc national marin de la grande barrière de corail, en Australie) et à Laurent MERMET (Professeur à l'École nationale du génie rural, des eaux et des forêts, Paris).

The Tiger, the Pangolin, and the Myths of *Panthera tigris amoyensis* — Past, Present, and Future

Chris Coggins

Summary. Globalisation is a set of processes driven in large part by free market capitalism and the exploitation of natural resources, but it is also partially mediated by the diffusion of norms for nature conservation and resource management. In part because of the necessity to limit the scope and theoretical concerns of conservation research, the connection between politics, social history, and environmental change remain largely unexamined. This article explores the ways in which social and historical processes in Chinese history articulate with environmental change and the relationship between humans and tigers. While tigers were seen as important autonomous agents of a cosmo-magical cosmos in pre-modern times, the influence of Western missionaries and naturalists led to a profound shift in Chinese conceptualisation of nature. With the rise of modern industrialisation under the rubric of Maoist and Marxist ideology, nature was attacked as an obstacle to progress; tigers were attacked in organised campaigns, and other wild fauna and flora were systematically harvested for domestic consumption and export. After examining the role that political and economic forces have played in the long-term historical relations between people and tigers, I conclude with the proposition that nature conservation can no longer be viewed as a domain separate from the realms of political economy at large (macro-) scales of geographic analysis, and of

political ecology at micro- and meso-scales. Present-day tiger recovery efforts in China exemplify how complex, historically constructed conceptions of highly charismatic species like the tiger may not only change with the political economic relations of the times, but also lead to conservation schemes that can easily fail to meet the needs and interests of the local people and other less powerful residents of the host country.

For every person in the world to reach present U.S. levels of consumption with existing technology would require four more planet earth.

E.O. Wilson, 2002

We can never ignore the conditions (social, political, economic) under which we appropriate and transform the world around us in accordance with our needs, wants, and desires.

David Harvey, 1998

The two prominent scholars quoted above represent the fields of biology and geography respectively. The first author is committed to the preservation of biological diversity worldwide, the second to global social justice in the form of equitable relations of production. The biologist goes on to tell us that the biosphere is infinitely richer from an ecological standpoint than we previously imagined, but that human ignorance will destroy most of its wealth by the end of the present century if drastic measures are not adopted posthaste. Given the dominance of capitalism, the failures of large-scale command economies, and the fact that the earth's finite "natural capital" (arable land, ground water, forests, marine fisheries, petroleum, species, and ecosystems) is being destroyed by economic practices that fail to account for the value of the living world, he maintains that first-world capital can and should pay for large-scale conservation and development in less-developed countries. This, he avers, should be done through debt-for-nature swaps and similar accounting schemes.¹ In contrast, the geographer, a Marxian theorist and self-

the discourse of impending ecological collapse too often legitimates environmental policies that favour the powerful and further victimise the oppressed.

proclaimed socialist, holds that the discourse of impending ecological collapse too often legitimates environmental policies that favour the powerful and further victimise the oppressed. Thus he invokes the principle that "projects to transform ecological relations are [or should be] simultaneously projects to transform social relations, and... transformative activity (labour) lies at the heart of the whole dialectics of social and environmental change." At this point it may be useful to reiterate the oft-cited fact that modern nature conservation evolved in 19th-century Western democratic societies with laissez-faire economies and conceptions of humans and nature peculiar to the ideological and material conditions of a specific time, place, and people.²

While both positions point to the enormity of the crises associated with globalisation, they lack pragmatic, critical, and comprehensive recommendations for grounding social justice and nature conservation challenges in practicable frameworks appropriate to a wide range of spatial scales, environments, and social conditions. In part because of the necessity to limit the scope and theoretical concerns of conservation research, few commentators can make meaningful connections between politics, social history, and environmental change.

This article cannot solve this problem, but I hope that it demonstrates several ways in which social processes articulate with environmental change. I contend that these matters, typically relegated to the realms of historical geography and environmental history,

...nature conservation can no longer be viewed as a domain separate from the realms of political economy at large (macro-) scales of geographic analysis, and of political ecology at micro- and mesoscales...

can help forge new links between social justice and nature conservation. After examining the role that political and economic forces have played in the long-term historical relations between people and tigers, I conclude with the proposition that nature conservation can no longer be viewed as a domain separate from the realms of political economy

at large (macro- scales of geographic analysis, and of political ecology at micro- and meso-scales.

The Tiger and the Pangolin

From 1992 to 1999 I conducted research on village resource management, environmental perception, nature conservation, and the history of people and wildlife in southern China. I spent a total of one year in three protected areas, the Meihuashan, Longxishan, and Wuyishan nature reserves, which lie in the Wuyi-Daiyun Mountain Range of western Fujian province (Fig. 1). The upland region is noted for its rich assemblage of subtropical fauna and flora that until recently included the last surviving wild South China Tigers (*P.t. amoyensis*), one of eight original subspecies or races of tigers, four of which persisted in China at least into the 1990s. My work depended on the good will, cooperation, and close companionship of local people who reside in villages of the reserve buffer zones, settlements established between 200-800 years ago. Not only did local people help with field surveys of ungulate habitat use, bamboo cultivation patterns, and sacred forest

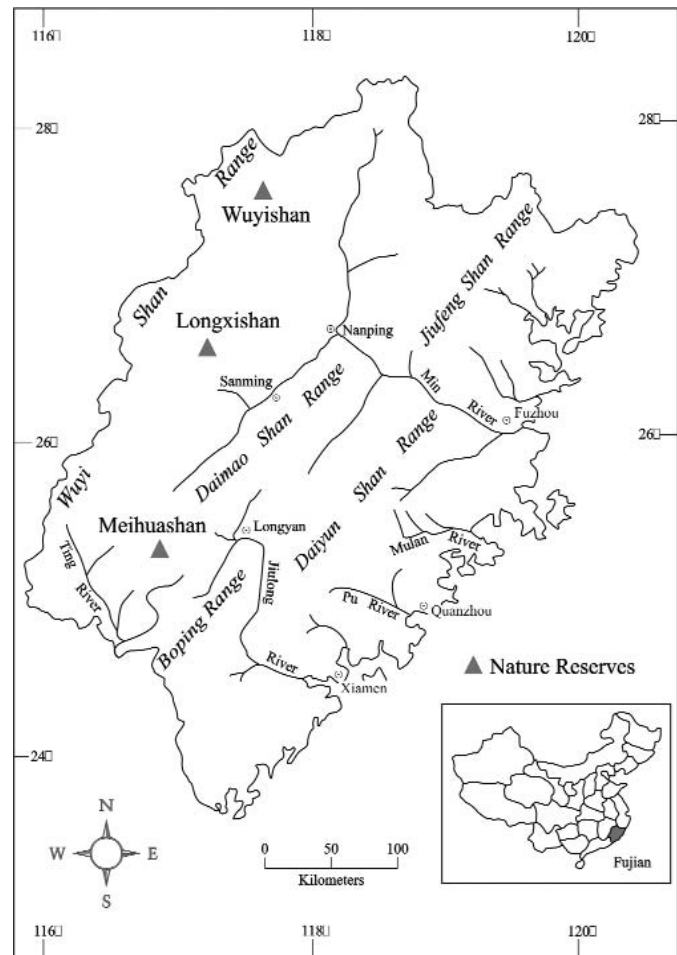


Figure 1. The three most important nature reserves of the Wuyi-Daiyun Mountains.

preservation, but they were also the subjects of study and primary informants on a wide range of topics involving the environmental history of their communities and of the region as a whole. The results of the study were published in a book called *The Tiger and the Pangolin: Nature, Culture, and Conservation in China* (Coggins 2003).

The tiger and the pangolin are prominent players in the environmental history of southern China, and I invoked them in the title, not only as subjects of study, but also to represent two distinctive vectors of anthropogenic environmental change that have operated at different spatial and socio-political scales in the region for many centuries. I chose the tiger, which is associated in Chinese tradition with celestial forces and

imperial power, to symbolise the central government and its historically long-lived role as arbiter of land use and environmental management at macro-regional, regional, and to some degree local levels. I adopted the pangolin (*Manis pentadactyla*), a scaly anteater still common in the region that is both highly prized for its medicinal value and feared for its magical powers, as a representative of local agency - the everyday resource management practices and long-term interests of villagers who have shaped mountain landscapes for centuries.

The Tiger: Political Economy and the Rise and Fall of *P.t. amoyensis*

Four historical periods have shaped relations between people and tigers in southern China. First, in pre-modern times Han peoples conquered and settled the southern frontier regions, converting them into places associated with the Chinese cultural realm; second, in the period of Western incursion, colonial domination led to the diffusion of certain cultural values and practices to China, with profound impacts on the relationship between humans and wildlife; third, in the period of geopolitical isolation, the Chinese Communist Party led the country in a war against nature in the name of industrialisation, modernisation, and the survival of the motherland; and fourth, during the current post-reform period unregulated capitalist production, state-run nature conservation, and the rise of private NGOs have given rise to new and sometimes contentious claims about the goals and methods of nature conservation.

The first period began in the early centuries of the common era with a series of migrations into the mountains, hills, and basins south of the Changjiang (Yangzi River), first from North China in the early centuries of the common era, and later from the crowded southeast coast. Gradually the south became the richest grain producing region in the empire; urban centers developed on

river plains and coastal lowlands, and increased exploitation of mountain resources caused environmental disturbances that put humans in greater conflict with tigers. This is documented in gazetteers of local history (*difangzhi*), which I employed to analyze the historical geography of human - tiger encounters. Five hundred and eleven records of tiger problems in four southeastern provinces (Fujian, Jiangxi, Hunan, and Guangdong) provide what may be the longest written chronology of human-wildlife interactions for any region of comparable size in the world. During the roughly 1,900 year period under examination, county and municipal records show that over 10,000 people were killed or injured by tigers.⁵ Encounters occurred in 146 of 362 present-day counties and administrative cities (a total of 40%) from across the region, and span from the year 48 C.E. to 1953 (Figs. 2 and 3). The government took tiger incidents seriously; even a *sighting*, if it occurred in or near a town, counted as history. This annalistic concern stemmed largely from the fact that the state and nature were linked through a traditional cosmo-magical concept known as the Mandate of Heaven (*Tianming*), according to which disharmonies in the natural order, or Heaven (*Tian*), signaled political disorder and misrule. Tigers were also seen as having conscious volition and free agency and as emissaries of Heaven - the cosmos - they were held in awe. As with all inauspicious events not fully attributed to human agency, management of tiger attacks often fell within the purview of local officials, literate men of high social standing who could mediate with heaven to bring an end to nature's vengeance through acts of ritual expiation. As a nexus between heaven and earth in the Chinese state religion and a representative of the emperor, the county or prefectural magistrate was expected to uphold the Mandate of Heaven. Good government meant a harmonious and prosperous peace between people and nature. The

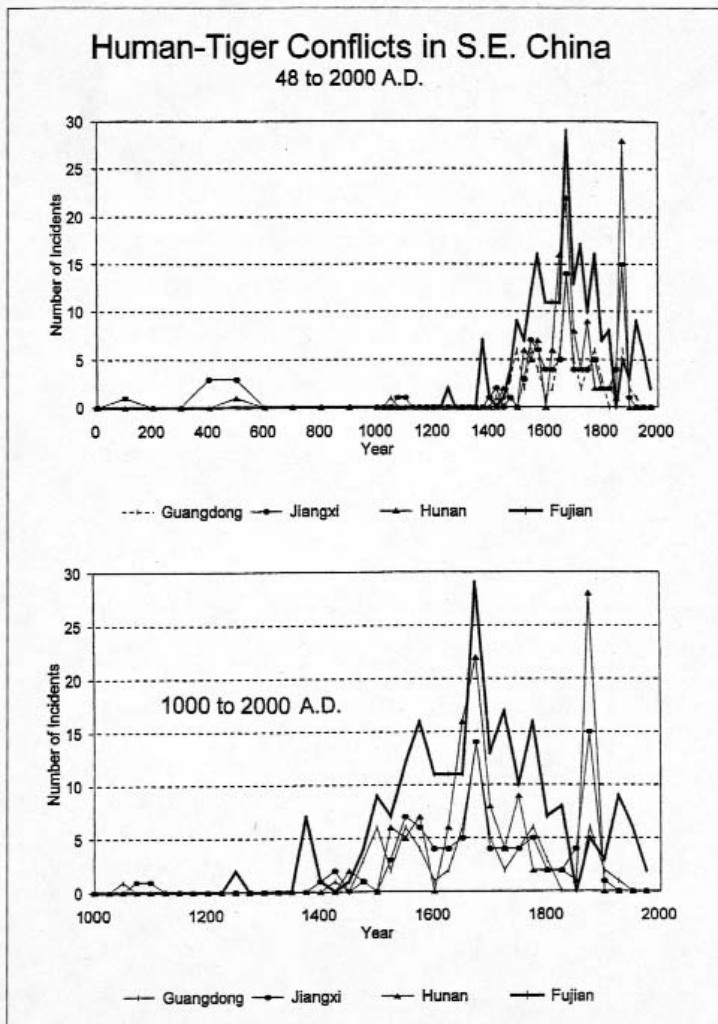


Figure 2. A temporal profile of human-tiger encounters in Southeast China. Recorded incidents increased dramatically in the mid-1500s and peaked in the last quarter of the 1600s, with a smaller peak in the late 1800s. The first rise corresponds with increased anthropogenic ecological disturbance throughout the southeastern uplands, a result of agricultural commercialisation, land enclosure, and engrossment along the densely populated coast. This sent a wave of settlers into the interior, where increased forest clearance and contact with tigers may appear to have caused an increase in tiger incidents. Since the actual records of tiger depredation may have held political significance as well (due to the Mandate of Heaven concept), the peak in political unrest in the late-1600s - the transition between the Ming and Qing dynasties - may account for the peak in records. The same may also hold true for the peak in the early 1900s, around the end of the Qing (1911). Peaks in typhoons recorded in these periods suggest that the record may have been as important as the events themselves.

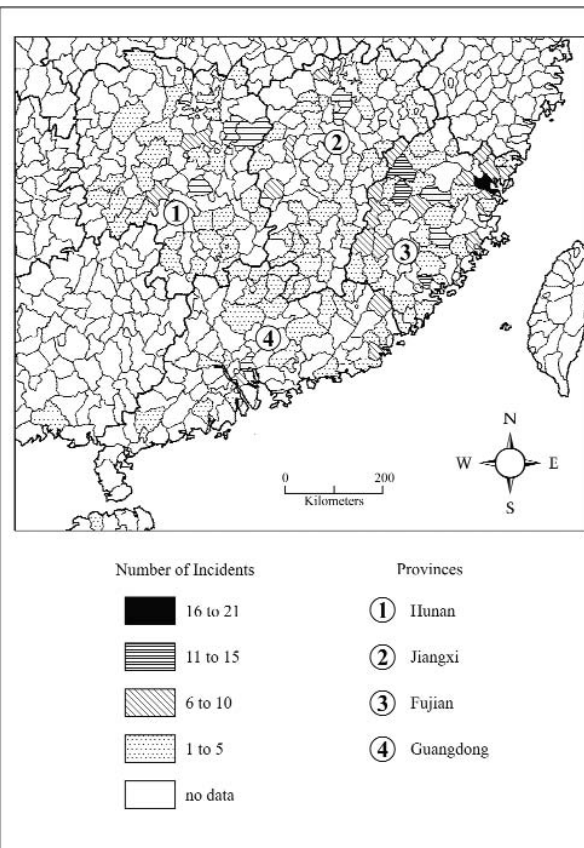


Figure 3. Distribution of human-tiger encounters in southeast China. Records of tiger attacks and sightings form a widespread pattern across the greater southeast upland region. Interactions from the Wuyi-Daiyun core area are particularly numerous. The large number of encounters in Fujian Province may reflect the fact that data were gathered in an archive in Fuzhou, the capital.

very act of keeping official records of tiger encounters was part of an effort to monitor and manage a natural (or supernatural) hazard,⁶ and the following gazetteer entry from Fujian illustrates how tigers and people were engaged in an intricate dance of cosmic agency and deferential human intervention:

In spring of the seventh year of Ming Chongzhen (1634), in Pinghe county, there were tigers on the rampage in the mountain forests...There were countless attacks on people and live-

stock...The county magistrate pleaded with the city god and the mountain spirits for mercy. As a result, one tiger was killed, two tigers sacrificed themselves (*zibi*) [probably in traps], and two tigers fled. The disaster was then quelled. The local person, Zhu Longxiang, had a tiger-destroying sign (*miehuji*).⁷ (Pinghe County 1719: Juan 10: 12a)

Given the reverence for the tiger evident in Chinese art, literature, folklore, and medicine, one might ask what caused the extermination of the so-called “Lord of 100 Beasts” throughout most of its range by the late twentieth century. It is clear that tiger parts were highly valued as medicine, and that man eating tigers were often killed, but would total destruction of the species have been a human prerogative, or even a conceivable event, according to traditional Chinese views of nature?⁸ The settlement of large numbers of Westerners in China, especially in the late 19th and early 20th centuries, had a profound influence on indigenous views of nature and natural resources, and ultimately, on the treatment of wildlife. Western colonial inroads into China were underwritten by profits from the opium trade, and the British empire became the world’s largest trafficker of illegal drugs. Chinese government resistance to the drug trade led to the Opium War (1839-1842), China’s military defeat, and the opening of five treaty ports from Canton to Shanghai in which foreigners had the right to settle and trade. This led to extraterritoriality⁹ for foreigners and an influx of Western missionaries, adventurers, and scientists through much of the Chinese backcountry. This was also an era of increasingly severe poverty, resource scarcity, famine, and disease, all of which were closely related to a demographic explosion that raised the population from roughly 100 million at the end of the Ming (1644) to nearly 500 million by 1900. The world’s greatest empire, where even rural people were accustomed to a certain

degree of prosperity and equity, had become the “sick man of Asia.” Into this socio-political morass stepped capitalism, science, Christianity, industrial technology, and “progress.”

A brief biographical example may illustrate how new conceptions of nature were part of the package. Harry Caldwell, a Methodist missionary from Tennessee who was also a hunter and naturalist, left a detailed narrative of his experiences with the people and wildlife of western and central Fujian from around the turn of the century to the 1920s (Figs. 4 and 5). His autobiographical book, *Blue Tiger*, provides useful information on the South China tiger and many other species of mammals and birds. It also describes local perceptions of wildlife, including the “superstitions” that Caldwell vowed to destroy through hunting and preaching the gospel. Deploying superior firepower, Caldwell saw tiger hunting as “a means for advancing the knowledge of the Christian God in the heart of Asia,” and he sought to refute local beliefs about so-called “spirit cats”¹⁰ that were protected by local deities. He noted that the magico-religious



Figure 4. Methodist minister Harry Caldwell, with a tiger he killed in Fujian. He wrote of this specimen, “I shot the animal with a .22-caliber high-power Savage rifle at close range, after the animal had charged me from a long distance. This is a bit of real missionary work I have greatly enjoyed, and incidently have found most helpful in the preaching of the gospel.” From Caldwell (1924).



Figure 5. Harry Caldwell and friends with quarry taken in Nanping, Fujian, in December 1921. In the foreground are a wild boar and various game birds. The men are holding the body of a reticulated python. From Caldwell (1924).

prohibitions against killing the animals were stronger than game laws would have been, had they been part of the legal code, but blind to any possible conservation functions in these customs, the minister sought to portray local mores as aberrant superstitions.

Caldwell was not alone; many foreign naturalists and adventurers were active in southern China, local people were employed as hunter-guides and specimen collectors, and from about 1900 on, there was a transfer of values and technology, as well as the formation of a new market for wildlife parts and specimens. This period marked the beginning of a transformation in local perceptions of wild animals from supernatural beings to natural objects for scientific investigation, and from a source of sacred medicine that was sold in local and regional venues, to commercial commodities to be sold in a growing international market. The vast environmental changes to come after 1949, as the Chinese Communist Party attained power, were driven by new definitions of “natural resources” and a revolution in the speed and thoroughness with which nature could be exploited. Wildlife and

other forest resources became mere commodities, the sole purpose of which was to serve the economic needs of “the people,” and a voluntarist ideology promoting the mastery of humans over nature became the organizing political principle of the era.¹¹

Aberrant as it may seem in retrospect, Mao’s “war on nature can best be understood in the light of Cold War geopolitics, China’s isolation from the world community, and the Marxist-inspired religious zeal to embrace science, technology, industrialisation, and progress to insure that the country would rise again to face a hostile world head on. Modernisation came amid socially disruptive ideological movements: land reform, the Great Leap Forward, communisation, the Backyard Iron Smelting Movement with the “Three Bad Years” resulting from gross neglect of agriculture (up to 30 million people died as a result), and finally, the destructive climax of ideological fervour known as the Cultural Revolution.

“Before the 1950s, an estimated 4,000 tigers inhabited a vast area in the humid subtropics of central and southern China; by the turn of the century there were none.”

Before the 1950s, an estimated 4,000 tigers inhabited a vast area in the humid subtropics of central and southern China; by the turn of the century there were none. During the 1950s, predator control was patriotic and revolutionary. Teams of peasants and soldiers encircled tigers in their mountain lairs, an ancient technique, but now the weapons of choice were grenades and machine guns. The extermination of tigers through systematic hunting was part of a national movement to conquer nature. Anti-predator campaigns, like the “Kill the Tiger Movement” (*Dahuyundong*), with its slogan “Kill the tiger, banish evil” (*dahu chuhal*), were part of the national policy of “bending nature to the will of the people,” a refrain

that played almost daily in the national press. The hunting techniques of early 20th century Westerners like Harry Caldwell were a catalyst for more systematic extirpation campaigns against tigers. If Fujian natives were awed by Caldwell's impressive firepower in the 1920s, they proved that they could achieve the same results on their own after "liberation." But in contrast to Caldwell's intense fascination with the natural history of the tiger, a love he expressed in the peculiar idiom of scientific interest mated to religious fundamentalism and tempered by "sportsmanship," the Chinese government was singularly committed to the permanent removal of the tiger from the stage of human progress. Wild animals became targets in a Maoist ideological war on nature. Peasants became crusaders in countless "battles" against the wild, the uncultivated,

During the 1950s, predator control was patriotic and revolutionary. Teams of peasants and soldiers encircled tigers in their mountain lairs, an ancient technique, but now the weapons of choice were grenades and machine guns.

and the unsettled. To make the best use of wildlife, which was being killed off at unprecedented rates, due in part to a massive increase in military weaponry among the peasantry, the government set up a system of Foreign Trade Stations (*Waimaozhan*). The trade in furs and skins (as well as wild and cultivated plant products) was fuelled by international

demand. Government data collected from eight provinces in central and southern China between 1951 and 1981 show how an estimated population of 4,000 tigers was rapidly decimated. From 1951 to 1955, there was an official average annual production of 400 tiger pelts. From 1961 to 1965, this figure decreased to 152 per year, and there were an estimated 1,000 tigers left in the wild. As tigers became scarce in the early 1970's production dropped to 1-2 in most provinces and to 5 in Henan and Hunan (Lu and Sheng 1986).¹²

The death of Mao in 1976 and the rise of Deng Xiaoping shortly thereafter led to the dismantling of the commune system and a series of major economic reforms by the end of the decade. "Socialism with Chinese characteristics" was the slogan for a transition to a market economy. Under the "Individual Responsibility System" farm households could produce and market whatever they liked as long as they met annual grain quotas. Urban and rural entrepreneurialism, joint ventures with foreign companies, a growing infusion of foreign investment, and burgeoning free trade have given China the greatest sustained economic growth for any region of comparable size in world history. Economic liberalisation has also marked a dramatic decline in the provision of social services; central government subsidies for education, health care, agriculture, women's organisations, transportation, and the like have been dismantled or severely weakened.

Local tax rates have risen sharply, and millions of rural people have migrated to the cities in search of work to make ends meet. During this period of rapid globalisation and radical social change, the Chinese government has made a "great leap forward" in nature conservation, establishing over 1,500 nature reserves in twenty years (by 2001 there were 1,757 reserves covering 13.2% of the country). This abrupt change in official policy toward nature marks a turn toward contemporary international political norms, and yet popular appreciation of distinctive fauna and flora is predominantly expressed through traditional cultural practices involving ornamental horticulture, consumption of medicinal plants and animal parts, and the (now burgeoning) consumption of wild game as *haute cuisine*. In this context, an unprecedented level of official policy formulation in regard to the South China tiger is a subject of

significant interest.

In the 1980s, the South China tiger faced imminent extinction, with an estimated 30-50 individuals inhabiting widely-disjunctive pockets of wild mountain habitat. In 1990-1991, the WWF (China) and the Wildlife Protection Associations of the Forestry Departments of Guangdong, Fujian, Jiangxi, and Hunan, conducted field surveys under the direction of American biologist Gary Koehler. Meihuashan and Longxishan yielded the greatest number of tiger signs in the southeast, while mountain lands at the borders of Jiangxi, Guangdong, and Hunan contained the most signs in southern central China. Only Wuyishan (560 square kilometres) and Hupingshan (Hunan) (400 square

kilometres) were possibly adequate in size for tiger conservation. Undaunted by long odds, the State Forestry Administration pressed ahead, and in the *Forestry Action Plan for China's Agenda 21*, in 1995, saving the tiger was a high priority. In its latest incarnation, the tiger had become a "mysterious and beautiful animal," and a matter of national pride. By 2000, the State Forestry Administration had completed the *China Action Plan for Saving the South China Tiger*, which included specific measures to expand and link existing nature reserves and restore habitats in: eastern Jiangxi, Fujian, northern Guangdong, western Jiangxi, and Hunan (Fig. 6). The plan also called for the "rehabilitation" of 170 square kilometers of agricultural lands for wildlife habitat, the relocation of 3,900 families (roughly 19,500 people), and the protection of 12,800 square kilometres of mountain land where tigers could range freely, enough to support roughly 90-130 (State Forestry Administration 2001).

The following year, a Sino-American research team led by Ron Tilson and Jeff Muntifering conducted an eight-month long field survey involving nine protected areas in five provinces to determine the status of the South China tiger. Their final report, which came out in January of 2002, concluded that "...there is no remaining viable population of South China tigers existing anywhere in its historical range" (Tilson and Muntifering 2002:24). Like many state-conceived plans in China, South China tiger recovery efforts were not to be derailed by bad news, in fact, the government refused to publicise or even acknowledge the results. Perhaps this response is not surprising; it comes from a tradition well developed under Mao of "going it alone" when foreign advisors attempt to impose their wills or their truths on China's central government. Another example of this approach is evident in the decision to proceed with the Three-Gorges Dam even after foreign



Figure 6. Protected areas designated as tiger reserves for habitat rehabilitation and tiger reintroduction. The proposed Zixi Pilot Reserve is also shown.

experts strongly advised against it and the World Bank withdrew funding. The case of the dam may in fact be particularly instructive since the management of human populations in preparation for tiger recovery and reintroduction - relocations of communities in preparation for the "rising waters" of the returning tiger populations - bears a strong resemblance to the coercive relocations undertaken for dam and reservoir development. The question in this case is "How much *nature* is enough?" How large and how numerous will the reservoirs of biological diversity need to be and what services will they provide for the country as a whole and for local people who are not removed from target regions? There are no easy or obvious answers, but private NGO's, working alongside the state, promise to present some intriguing and troubling suggestions.

Before examining private sector efforts, we should note that the most ambitious state-led tiger recovery work to date is happening at Meihuashan, where six tigers occupy a new captive breeding and retraining facility. The 467 hectare facility encompasses a representative array of habitat types near the southern boundary of the reserve, and the tigers have regular access to outdoor zones where they are learning to kill mammals, including captive prey. A deer farm was established to raise *sika* deer as prey during the training period and to attract tourists. It is hoped that the tigers will produce at least ten cubs by 2007, and that this second generation will learn to hunt by following the example of their parents. By 2010, by which time managers hope the tigers will be capable of bringing down large prey and surviving in the wild without direct human intervention, the doors of the enclosure will be opened. The tigers will be released into a special tiger reserve, projected to be 600 square kilometres in area (nearly three times larger than the present nature reserve), and still have continuous access to the security and food of the enclosure. If

the first reintroductions succeed, additional tigers will be trained and released in Meihuashan and perhaps other reserves (Huang Zhaofeng, personal communication; State Forestry Administration 2000). In July of 2001, a female gave birth to three healthy cubs, and the project manager, Huang Zhaofeng, reported happily that the adult tigers had learned to kill live goats and wild boar piglets.

Unfortunately, the population may already be dangerously inbred; today there are over 60 captive tigers in China, but all are thought to be descended from only six wild-caught tigers, with most of the genetic material in the population originating from just two of the founders. Compounding the difficulties is an official confidence in technological fixes to revive nature, and a corresponding disregard for socio-cultural variables; a new, and in many ways admirable agenda is cloaked in an old, familiar technocratic hubris that has caused disasters in China before, and may yet again. In 1999, when asked if Meihuashan villagers had been notified about the plan to reintroduce the tigers and whether there would be educational programs to explain the reintroduction process, a reserve administrator responded that there was really no need to do so: "If there is enough wild prey in the reserve, there will be no conflicts between people and tigers. There is really no need for special programs like this." In what will be a 600 square kilometre reserve with some 10,000 residents, this may not be the most prudent approach, but the *China Action Plan for Saving the South China Tiger* shows that the government may have an additional surprise for the people of Meihuashan in the near future, for it calls for the relocation of 300 families from the larger tiger reserve area in order to rehabilitate tiger habitat.

An important question that Chinese officials do not ask is, whether rapid (and desper-

ate) measures to restore the tiger to its habitat are called for? While the most common apposition for the South China tiger in the last 20 years has been, "the most endangered of five remaining subspecies of tigers," geneticists and zoologists who specialise in tigrine diversity now argue that there is no molecular genetic support for the idea that so-called "tiger subspecies" are significant evolutionary units.

Morphological and genetic diversity in tigers is low, and differences between regional populations is thought to be "clinal", meaning that there are gradual changes in genotype and phenotype across the species' geographic range, rather than abrupt, genetically significant boundaries. These differences reflect adaptation to different climates and habitats over the last 10-20 thousand years rather than longer-term sub-speciation (Kitchener 1999, Wentzel *et al.* 1999). This re-conceptualisation of tiger diversity has tremendous potential to revitalise tiger conservation efforts. As Andrew Kitchener suggests, "...critically endangered South China tigers could readily be genetically reinforced by animals from northern Southeast Asia and possibly the

Indian subcontinent. The most important conservation outcome is that tigers continue to survive in China, where they continue to perform their vital role as top predator." Unfortunately this idea has not been accepted by representatives of China's State Forestry Administration (SFA) in charge of tiger recovery; the importance of the South China tiger as a national symbol is simply too great to be undermined by the science of genetics. As one Western tiger researcher pointed out, "The tiger is not a biological unit, it is a biopolitical unit. The people of

India do not want a Sumatran tiger, the Chinese do not want a Southeast Asian tiger." Whether extinction in the wild marks the end or a new beginning for the free-ranging tiger in southern China may hinge on a struggle between nationalistic concerns about the purity of China's nature, on the one hand, and a pragmatic grasp of scientific evidence, on the other.



Figure 7. A young adult tiger in the Meihuashan Nature Reserve captive breeding and reintroduction facility. (Courtesy of Chris Coggins)

By 2004, the most remarkable and contentious tiger recovery efforts were the result of collaboration between the SFA and a private NGO called Save China's Tigers (SCT). Li Quan, the founder and director of the London-based SCT, is employing the tiger as a national symbol in order to expedite reintroduction projects in what will become heavily managed and enclosed "pilot reserves." After initial efforts to work closely with the IUCN/SSC Cat Specialist Group (CSG) and Western conservation experts (including providing funding for the

survey by Tilson and Muntifering), Quan has more recently relied on close ties with the Director of the Wildlife Division in the SFA, Wang Weisheng, to operationalise a bold, and critics say rash, tiger “rewilding” and reintroduction plan. The project was officially launched in September 2003 following formal protests to the SFA by the IUCN/SSC CSG; and two captive tigers were taken to an SCT-owned reserve in South Africa for training. If all goes as planned, retrained tigers will be flown back to China and placed in a 180 square kilometre enclosure in Zixi County, Jiangxi (Fig. 6), stocked with ungulate prey and accessible to “eco-tourists” in motorised vehicles; all this in time for the 2008 Summer Olympics in Beijing (for which Quan is lobbying to make the “Chinese tiger” the official mascot). CSG condemnation of the SCT programme is based on five primary concerns, outlined in a letter, dated April 29, 2003, and addressed to Wang Weisheng from the IUCN/SSC CSG: that South China tiger recovery should be part of a national strategy to protect all four races of tigers in China (members of which still survive in the wild), not just the one that is unique to China; that no reintroduction programs should begin until an up-to-date master plan for management of the genetic diversity of the captive population is developed and implemented - removing individuals from the breeding population could pose a significant risk to an already inbred group; that a Population and Habitat Viability Assessment (PHVA) be conducted to insure sufficient prey and habitat before reintroduction; that tigers should not be taken to South Africa since it is unnecessary, poses certain ecological risks, and displaces native species. The SFA never responded.

The Pangolin: Local Social Processes and Environmental Justice

While faults and merits of each side of the highly complex tiger controversy cannot be

enumerated here, I would like to make note of the distinct silence about certain people in the discussions of tiger recovery.

Certainly “local people,” “peasants,” and “villagers,” are mentioned in all reports and plans, but they tend to get flattened into abstractions, they are cast as barriers to—or even saboteurs of—a potentially ecotopian landscape, unnatural inhabitants of the wilderness to be. As the survey report for the SCT plan states in regard to the 6,032 residents of the two places that top the list of possible pilot reserves, “Action needs to be taken on the ground to hasten emigration, build up prey levels and put into place the necessary infrastructure to re-introduce tigers and to minimise potential conflict with surrounding rural communities” (Anderson *et al.* 2004; 6). The same text contains a group of four photographs of abandoned stores, homes, and shops, along with four small children in the one remaining classroom of a dying school, and these photos illustrate “natural emigration from Zixi.” This hopeful reference to newly opened “wildland” conveniently avoids the social implications of waves of rural-to-urban migration - the tragic corollary of rural impoverishment and dislocation that marks the downside of economic liberalisation in China. And what of the other 246 million citizens, rural and urban, of the five provinces in question? Can we assume that they are predominantly in favour of tiger reintroduction? The fact is that there have been no scientific surveys of popular opinion regarding tiger reintroduction in China; apparently the official decisions about nature are best left to those who have money and power. It should be kept in mind however, that many of the everyday decisions that shape the

“Certainly “local people,” “peasants,” and “villagers,” are mentioned in all reports and plans, but they tend to get flattened into abstractions, they are cast as barriers to— or even saboteurs of— a potentially ecotopian landscape, unnatural inhabitants of the wilderness to be.”

landscapes and ecosystems of southern China are still made by those who do not.

Throughout this discussion I have tried to shed light on the relationship between social relations and the transformation of nature. In the current phase of capitalist development, nature is appropriated as what Escobar (1996) calls "ecological capital;" in this context the value of rare fauna and flora lies not so much in their useful-

ness as resources, but in their symbolic value and the wealth of their genetic material. Nature reserves become repositories of accumulated capital, investments deposited in carefully circumscribed conservation territories from which, it is believed, dividends can be reaped over the long-term. It is important to note, however, that the biosphere reserve model on which China's national nature reserve system is based, is not structured in this dualistic fashion, but emphasises land use zoning, a more integrative approach to meeting the subsistence and sustainable commercial needs of local people while maintaining an array of conservation goals at various scales. Along the same lines, studies of large-scale landscape ecology and social conditions in southern China, utilizing remote sensing and GIS data, could be of major benefit in the formation of policies for land tenure equity, judicious game laws, carnivore management strategies, and addressing the subsistence and commercial labour issues of rural people. These are all critically important dimensions of the living

world, and they will shape the nature of the future in rural southern China. In summary, the tiger has been shot, trapped, and squeezed out of its final mountain haunts; if it is to return, it will do so in a natural world dramatically reconfigured by human design. In recognizing this, and in knowing the mythical dimensions of the tiger of the past, the time has come for an international effort to develop a socially just and environmentally sound tiger reintroduction programme in the wilds of southern China.

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- 3 The discipline of political economy focuses on "aggregates of individuals, on how power relations distribute resources between such aggregates and on how these distributions of resources maintain relations of domination and subordination" (Mohun 1994: 478).
- 4 Political ecology arose from the adjustment of cultural ecology to political economic concerns in the 1980s. From the 1930s to the 1980s, cultural ecology engaged anthropologists and geographers in the application of ecological theory to the resource management and social practices of relatively isolated indigenous and peasant societies in order to show that they were "adaptive systems just like any other biological population, and culture was posited as an ecologically functional attribute of the evolutionary demands of the environment" (Peet and Watts 1996: 5). Studies in political ecology often maintain a carefully bounded geographic framework, but are inherently concerned with a larger network of spatial and temporal processes and relations. As Peet and Watts (1996: 5) explain, "Market integration, commercialisation, and the dislocation of customary forms of resource management - rather than adaptation and homeostasis - became the lodestones of a critical alternative to the older cultural or human ecology."
- 5 This is hardly surprising if we consider Richard Perry's (1965) estimate that at least 1 million Asians had been killed in the last 400 years, an average of 2,500 per year. Also, this figure would be much higher, but 395 records did not specify the numbers of casualties.
- 6 The connection between poor government, societal disorder (*luan*), and tiger depredation has lasted to the present, and some villagers in Meihuashan today say that the rise of the Chinese Communist Party brought order, and as a result tigers "went away" (*zoule*).
- 7 Probably a "fu" or written charm with magical properties.
- 8 For those who are skeptical about this rhetorical question, see Coggins (2003) and Hammond (1991).
- 9 Exemption from local legal jurisdiction.
- 10 Caldwell (1924) uses this term because the Chinese word for civet - "*lingmao*," can be translated "spirit cat." The name *lingmao* is also commonly used in the Southeast Uplands to denote a number of small and medium-sized mammals like foxes, civets, leopard cats, and mongooses.
- 11 For a comprehensive treatment of human-nature relations from the Great Leap Forward through the Cultural Revolution, see Shapiro (2001).
- 12 Lu and Sheng 1986. Despite increased international control of trade in wildlife and wildlife products following the formation of CITES in 1981, a CITES report showed that by 1989 China had exported 89,656 cat skins, about 66% of the world total (reported) of 136,825. Though this report does not indicate species, it shows that wild cat populations were relentlessly slaughtered through the 1980s.

Notes

- 1 In support of his argument, Wilson (2002) provides a remarkable array of financing schemes undertaken by the world's wealthiest NGOs to establish large protected areas in countries harboring the most biologically diverse environments.
- 2 For the history of wilderness preservation and conservation in the United States see Nash (1982). For a broader critique of Western constructions of humans and nature, see Merchant (1996). Critiques of "the Yellowstone concept" of protected area management, along with perspectives on community-based conservation include McNeely and Miller (1984), McNeely (1985), Western, Wright, and Strum (1994), and Stevens (1997).

The historical origins of modern forestry policy in Bolivia— The challenge to govern a vast land

Krister Andersson and Diego Pacheco

Summary. This article offers a fresh perspective on the latest round of reforms in Bolivia's forestry sector. Advocates claim that such reforms have improved the conditions for community forestry in the country. We analyze how public policies in the forestry sector have evolved over time, and pay particular attention to how different governmental regimes have dealt with the problem of forest tenure insecurity for smallholders and indigenous groups. Using historical narratives, we discuss the proposition that the devolution of *de jure* forest property rights to local user groups is a necessary, but not sufficient, condition to improve the security of forest tenure for the rural poor. We attribute the failures of past policies to a lack of fit between the coercive, government-engineered institutions and the reality of local forest users. Efforts to improve forestry sector governance in Bolivia, and other non-industrial countries, will be more effective, we argue, when the public policy process is capable of capitalizing on existing institutional arrangements that local groups have created to provide a variety of self-organised collective goods and services.

Since the mid 1990s, Bolivia has made efforts to create an enabling policy environment for community forestry. The 1996 forestry and agrarian reform laws recognised smallholders and indigenous groups as legitimate forest users, and decentralised many of the previously centralised governance responsibilities to regional and municipal governments. Both the FAO and UNDP have praised Bolivia for their political will to decentralise and modernise the governance structure of the country's forestry sector.¹ The reforms allow for local communities and individuals to acquire formal rights to manage forests, either as individual or as common property.

The enforcement of these property rights, however, is still very much a top-down affair, and it is unclear whether the reforms have actually increased the forest tenure security of rural dwellers. In this paper we examine the influence of past and present forestry policies on local forest user decisions, paying particular attention to the influence they have had on two key condi-

tions associated with secure forest tenure: (1) A mutually recognised and clear delineation of the forest resources by both governmental authorities and local forest users, and (2) Legal power for local users to exclude and regulate the use of the forest that they claim, either individually or as a group.² The thematically focused historical analysis of forest governance in Bolivia provides several insights into the realistic possibilities and limitations of contemporary forestry policies.

Forest governance in Bolivia

Bolivia is one of the poorest and richest countries in the world. It is poor in the sense that more than half of its rural population suffers from some degree of malnourishment.³ As a matter of fact, the current inequalities in terms of both income and assets are one of the highest of the region. But at the same time, Bolivia is rich when it comes to its endowment of natural resources. In 1851, Gibbon described his encounter with the lowland forests: "all the silver and gold of Peru are not to be compared with the undeveloped commercial

resources of this beautiful garden".⁴ More recently, the FAO depicts the Bolivian biological diversity as one of the richest in the world, reporting that in the Lowlands alone, seven distinct forest types with 2,700 of dif-

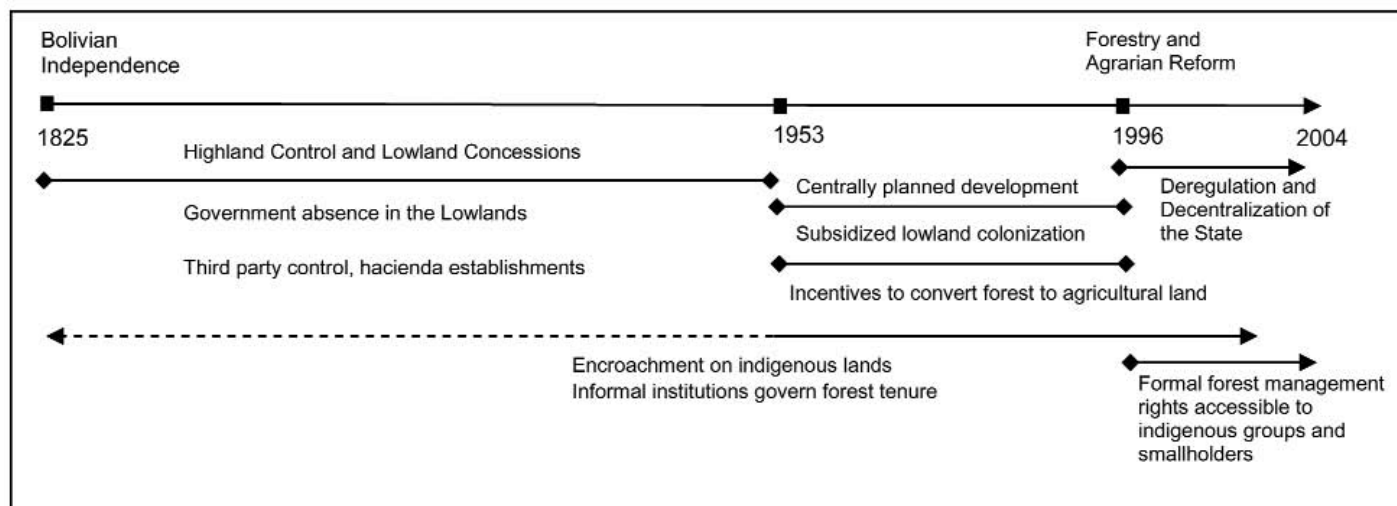
ferent tree and shrub species have been identified.⁵

The majority of all Bolivians depend to some degree on the goods and services that the country's forests provide. The forest dependence is especially notable in rural areas, where people rely on the forest for a wide variety of household necessities such as firewood, construction materials, fodder, fruits, nuts, medicines, and in some cases wage labor.⁶ Hence, Bolivia's forestry sector constitutes an important contribution in efforts to reduce poverty in Bolivia.⁷ A score of policy analysts along with Bolivia's government itself, recognise that while forestry does have a tremendous potential to alleviate poverty, the sector is far from reaching this potential.⁸ These observations beg a question: What prevents forestry activities in Bolivia from contributing more to rural poverty alleviation?



Figure 1. Pristine rainforest in the Bolivian Lowlands in the early 20th century. Photo taken by P H Fawcett outside Cobija in Pando in 1910. (Courtesy The Royal Geographical Society).

Figure 2. Forestry policy evolution in Bolivia



Source: Elaboration by the Authors

We would like to argue that forest resources in Bolivia, whether they happen to exist on public or private land, are plagued by ambiguous property rights. As shown by our brief historical review of forestry policies, this problem appears related to the failure of the heavily centralised governmental

administration, which continues trying to control Bolivia's vast territory through a coercive, top-down governance strategy.

In this essay, we analyze the implications of public policy on forest governance during three distinct periods of Bolivian forestry

sector history, which are characterised by: (i) Highland Control and Lowland Concessions (1825-1952), ii) Centrally Planned Economic Development (1953-1992); and iii) Deregulation and Decentralisation of the State (1993-present) (Fig. 1).

Highland control and lowland concessions (1825-1952)

Throughout history, the socioeconomic and political powers in Bolivia have resided in the highlands. After the Spanish invasion, the powerful Spanish elite settled in the highlands and developed several commodity industries. Eventually they constructed the necessary road infrastructure to export silver, rubber, tin, and gas via the ports on the Pacific coast.⁹ The lowlands populations, on the other hand, consisted mostly of indigenous groups who were locally rooted in a combination of subsistence and local market production, largely disconnected from central government and international markets.¹⁰ Demographically, the two regions could not have been more different in the 19th century—the population density was high and rising in the highlands while the lowlands remained virtually unsettled by white men and only sparsely populated by indigenous groups and rubber tappers.¹¹

The Bolivian government regime in the 19th century may be defined as a feudalist state that was created to maximise the gains from the export-oriented exploitation of the highland's mineral resources. Most analysts attribute the origins of this system to the "300-year process of Spanish colonisation and dual society".¹² The government's attitude towards the lowlands at the time was that most of this land was either uninhabited or ill-inhabited.¹³ The attitude among the highland settlers was not much different as "the Aymara and Quechua population dread the lowlands as they dread the plague".¹⁴

The government tried to establish indirect



Figure 3. Rubber tapper camp in Northern Beni, in the early 20th century. Photo by P H Fawcett, 1910. (Courtesy The Royal Geographical Society).

control over the territory by giving out large, privately financed land concessions in the lowlands to powerful third party estates. Throughout this period, the absence of governmental organisations characterised the lowlands. An observer from this period offered this description: "You speak of Bolivia to a Lecco Indian or to a man from the Beni, the Madre de Dios, the Aten, or the Challana, and they will tell you that they do not recognise a government which does nothing for them except to collect a personal contribution."¹⁵ Twenty years later, geographical explorer Edwards asked a canoe operator in the Beni river in the lowlands about what he thought of the government. The man replied: "Government? What is that? We know no government here."¹⁶

In the absence of government, a large part of the forested areas of the lowlands was an open-access resource governed by the "law of the jungle", by which the most aggressive and strongest was able to gain control over the resources. Because of the highland's people's fear of the indigenous groups in the lowlands, these groups were able to go about their lives relatively undisturbed by concession holders, rubber tappers, and other "developmentalists". The Jesuit priests, however, did have a significant impact on the indigenous population.

Their principal aim was to have the Indians settle on the land to practice sedentary agriculture.¹⁷ The role of the Missions has been described as “frontier points to capture, convert, and reduce to civilisation some of the less savage Indians, who as neophytes learn the religion and customs of the white man.”¹⁸

In summary, during this time period, the early republican governments essentially followed the Spanish strategy of creating order on, and control over, the Bolivian territory. They confiscated large, previously indigenous common areas and redistributed them among certain interest groups under private ownership rights. As a result, the government’s allocation of formal property rights encroached on the informal property rights of certain indigenous groups – the *de facto* rules that these groups had developed to co-exist with their neighbors and their shared resources. These encroachments created conflicts over property rights, which most frequently resulted in indigenous groups capitulating to the interests of the more powerful colonisers.

The conditions for indigenous forest users to enjoy secure forest tenure during this era could not have been more inadequate, as neither mutually recognised boundaries nor legally empowered indigenous resource users existed at the time. Moreover, the intentions of government authorities and local users with regard to the allocation of property rights were at odds, making any mutually beneficial enforcement of rights impossible.

Centrally-planned economic development (1953-1985)

The first post-revolution government in Bolivia, led by Paz Estenssoro in 1952, viewed the State’s role as that of a central planner and coordinator of economic development. During this period, mines and other large corporations were nationalised.

According to historian Juan de la Mesa, the Paz Estenssoro administration set the tone for government interventions in the Lowlands for the next three decades. By the 1970s, the central government’s public sector contained 520 agencies.¹⁹

The central government’s colonisation programme consisted of aggressive land titling with the objective of relocating scores of landless people from the highlands to the sparsely populated lowlands. Settlers received a conditional title of approximately 50 hectares on the agricultural frontier.²⁰ The centrally planned colonisation effort was an expensive task, and as more and more people migrated to settle in the lowlands, less and less government services became available for settlers.²¹ By the late 1950s, the titling programme started showing signs of heavy strain as the back-log of untitled land grew quicker than government agencies could inspect and issue new official titles.

Informal arrangements are still prevalent strategies for lowland populations to deal with tenure insecurity, variable climatic conditions, volatile markets and other risk factors

The government’s capacity to respond to local settlers’ demand for titles as well as requests for technical support and infrastructure development for agricultural production was severely hampered by the political instability that characterised Bolivian rule in the post revolution era. For instance, during the 18-year period between 1964 and 1982, of the twenty different governments in power, only five were civilian. Despite obvious political differences between the military and civilian governments during these years, all shared the same centralist policy of government control over the productive sectors.²² The political leaders’ vision of central government as the crucial locus of power over the productive sectors would characterise government until

the mid-1980's, when economic crisis forced the country into a World Bank-designed structural adjustment programme.

The government's policies and practices during this period were geared towards the creation of a nation-state based on private agricultural entrepreneurs. In a sense, these efforts were a continuation of previous policies, but it was not until after the agrarian reform of 1952 that they gained momentum. Despite the land reform's ideological undertones of social justice, and recognition of the need for a more equitable distribution of land and resources, the reforms largely failed. De Janvry and Sadoulet (1989) provide a viable explanation of such failures in the broader context of land reforms in Latin America in the mid 20th century, arguing that "land reform failed to be redistributive because it sought to first modernise large farms, which allowed landlords to reinforce their power over the state."²³

The limited capacity of central government, aggravated by the extreme political instability during the three decades following the 1952 revolution, led to little direct interactions between government and local settlers. As a consequence, the influence of government policy on local settlers' land use decisions has been partial at best, and in some cases non-existent.²⁴ In order to deal with the uncertainty that a lack of formal governance structure produced in their new environment, settlers turned to more informal institutional arrangements to address the problems they faced. Such informal arrangements are still prevalent strategies for lowland populations to deal with tenure insecurity, variable climatic conditions, volatile markets and other risk factors.²⁵

The government-led colonisation campaign in the Lowlands was fueled by governmental policies with a strong bias towards agricultural production. Such policies were not conducive to sustainable forest manage-

ment. The 1953 land reform viewed forestry as a less productive land use compared to agriculture. As a direct result of the reform, clearing of forest became the most widely-accepted way of demonstrating control over one's land. Clearing land for agriculture also became an important strategy to discourage the settlement of squatters.

Even to this day, the old agricultural paradigm of the colonisation era persists at the expense of forestry, and the tension between agriculture and forestry as competing land uses (rather than complementary) remains largely unresolved because of the national government's pro-agricultural policies. Although the new 1996 land reform²⁶ recognises forestry as a legitimate land use, forest clearance has become the traditional form of land improvement in the lowlands and continues to be the way rural people demonstrate control over contested land areas.²⁷

The conditions for secure forest tenure improved during this era as smallholders were given formal land titles in the tropical

The old agricultural paradigm of the colonisation era persists at the expense of forestry, and the tension between agriculture and forestry as competing land uses (rather than complementary) remains largely unresolved because of the national government's pro-agricultural policies



Figure 4. Soy bean plantations are considered the main drivers of deforestation in the Bolivian lowlands, as here in Pailón, Santa Cruz, in 2001. (Courtesy K. Andersson).

lowlands. The problem with the reforms was that they produced strong incentives for settlers to clear the forest for agricultural land, as this strengthened their claim in case of land disputes. As a result, forestry activities were undervalued as a contribution to the rural household economy in comparison to agricultural activities. One of the lessons from this era is that the establishment of formal property rights is not enough to promote natural resource conservation, especially if other public policies encourage short-term strategies.

Deregulation and decentralisation of the state (1985-present)

In the mid-1980's, there was a government-led and donor-supported effort to transform the Bolivian central planning model to a modern market economy. The structural adjustment programme, which improved the financial stability of the country, was followed up by a second generation of reforms in the 1990's. Part of this reform package, which focused on reducing the central bureaucracy through decentralisation of the public sector functions and privatised the government owned corporations, were the 1996 agrarian reform²⁸ and the 1996 forestry law.²⁹ For the first time in Bolivian history, the country's formal legal framework recognised forest management as a legitimate land use for all property owners. Formal property rights with regards to forest resources according to the two integrated laws can be summarised in the following manner:

- The Bolivian State owns all forest resources in the country;
- Private ownership of forest resources are limited to forest plantations and harvested products that are accompanied by government permits;
- The current private land holders' user rights with respect to the forest on their land include:

- ▶ Household use of forest products and services on their land without any formal permits from the government;
- ▶ Forest management activities, including commercial timber logging, if in accordance with the national standards of sustainable forest management;³⁰ and
- ▶ First option to apply for commercial logging rights, but may pass on or sell these rights to third party users who do not hold formal titles to the land.

The implementation of the new formal property rights system has been a very complicated and slow process partly because of the number of contested land areas and the limited resources of the government agencies in charge of implementation. The agrarian reform agency's task to sort out overlapping claims through an elaborate 'legal sanitation' process carries an impressive back-log. Five years after the new law was passed, less than 10 percent of Bolivia's land surface had gone through the legal sanitation process.³¹

The new possibilities for rural smallholders to gain access to timber management rights have also been met with several challenges, mostly from government bureaucracy. One recent study determined that for forest user groups to gain access to a community forestry concession, 26 different administrative permits and requirements had to be met.³² As a result of the inflexible and slow administrative system, very few local groups have been able to access formal timber management rights. In 2002, the authorities in more than one third of all forest rich-municipalities in Bolivia had failed to issue even one single management permit to local communities.³³ Consequently, despite the promising

As a result of the inflexible and slow administrative system, very few local groups have been able to access formal timber management rights

reforms, only a small fraction of all forest user groups in Bolivia have secure land title, and even fewer have secure access to forest resources.

Because of their closer geographical proximity to local forest users, and because of the past failures of central governance, municipal governments are often considered to be in a better position than central agencies to engage in such co-provision activities.³⁴ The role of local governments within the new regime is to monitor local compliance with the new legislation, promote forestry sector opportunities for smallholders, and to facilitate the process through which smallholders gain legal access to forest resources.

There is little doubt that the latest set of reforms has improved the conditions for rural populations to enjoy forest tenure security in Bolivia. The reforms have explicitly recognised, at least on paper, that indigenous groups and smallholder farmers are legitimate forest managers and stewards. The reforms have also instructed governmental authorities to work with the resource users to determine what the actual boundaries of the managed resources are, and then formalise the local users as the legitimate property right holders for that resource.

An increasing number of empirical studies are examining the conditions that may support better outcomes for decentralised forest governance in Bolivia. Findings to date indicate that the outcomes for community forestry is very mixed, but also that local users benefit when the recently empowered municipal governments have more financial resources and qualified personnel; are pressured by both central government and local user groups to take action; and when municipal government representatives agree to form collaborative agreements with NGOs, central government and local user groups to co-produce services in the sec-

tor.³⁵

The challenge to provide forest tenure security

Despite recent reforms to address tenure insecurity, only a small fraction of all forest user groups in Bolivia have secure land title, and even fewer have secure access to forest resources. Insecure land tenure adds to the uncertainties associated with forest users' access and user rights to forest resources. Without such tenure security, forest users are unlikely to develop longer time horizons and instead favor activities that provide short term pay-offs. In other words, forest users whose rights may be easily challenged by the government or rival users are not likely invest in sustainable forest management activities, which distribute benefits over the longer term.

One of the main reasons for the current situation of widespread land and tree tenure insecurity in Bolivia is the extremely skewed land distribution, especially in the forest-rich lowlands. For instance, in the two largest departments of the Bolivian Lowlands, Santa Cruz and El Beni, 87 percent of the land is concentrated in properties of 500 hectares and larger. These properties are in the hands of only 5.4 percent of the total number of landholders. On the other extreme of the spectrum, 84.6 percent of the total population of farmers represents small land holders who occupy only 6.9 percent of the total land area.³⁶ These inequalities, which are the consequence of almost 200 years of oligarchic land policies, provoke conflicts over land and competing land uses.

A recent survey with representatives of rural communities in 50 randomly selected municipalities in Bolivia confirms the presence of forest tenure insecurity among smallholders in the Lowlands. When asked about the most serious problems in the forestry sector that rural communities face,

84 % of the community leaders mentioned problems related to forest tenure. Legal access to timber products was also mentioned as a particularly serious problem.³⁷ In addition to the skewed land distribution, a variety of other explanations have been presented to explain insecure forest tenure in Bolivia. These include: a sparsely populated land with large patches of forests, and a governance structure that introduces uncertainties into forest management.³⁸

The Bolivian government's policy responses to these problems have been similar to those of other developing countries: central government-led, command and control instruments. As the historical analysis revealed, such a regime was designed to benefit a small group of elitist rulers and was officially justified on grounds of geopolitical interests. After a long history of ineffective forest governance policies, the 1996 forestry law marked a new beginning in Bolivia's efforts to address problems of forest tenure insecurity. Progress has been slow, and many difficult challenges lie ahead, but most analysts agree that a step in the right direction has been taken.³⁹

The future role that forestry activities will play in alleviating rural poverty in Bolivia depend to a great extent on how national, municipal and community level actors work together to monitor and enforce the forest property rights of the rural poor.

For these reforms to lead to any real improvements in local forest users' forest property rights, governmental authorities need to interact with local users to develop mutually recognised rules that control access to forests and regulate competition over them.⁴⁰ So far, such arrangements have developed only sporadically. There are several issues that such institutional arrangements need to address, such as: who has legitimate access rights to the forest; what harvesting activities are allowed;

and what enforcement powers are assigned to local user groups. Even if a formal agreement is reached, the enforcement of the rules will also require the active cooperation from both governmental authorities as well as local forest users. The active involvement of the local forest users seem particularly crucial for the monitoring and enforcement of rules as the governmental authorities usually do not have either the resources or the personnel to do so. Hence, the future role that forestry activities will play in alleviating rural poverty in Bolivia will depend to a great extent on how national, municipal and community level actors work together to monitor and enforce the forest property rights of the rural poor.

Conclusions

Why is forestry not playing a more important role in the fight against poverty in Bolivia? The evidence we discussed points to problems associated with forest tenure security and legal access to forest resources, which appear to have hampered rural people's ability to benefit from sustainable forest management. While recent reforms have increased the possibilities of creating improved conditions for community forestry, many contemporary empirical studies suggest that this is by no means an automatic process.

This transformation process is about much more than just changing the law- it is about transforming a deeply rooted culture of governance

One of the common challenges for government and users alike is to create local level institutions can implement the progressive reforms in an effective and equitable manner. The eventual contribution of forestry to poverty alleviation will depend on the effectiveness of these joint efforts.

The political history of Bolivia speaks of the government's reliance on coercive governance as the principal method of inducing citizens to conform to public policy. Coercive governance by any level of government —

central, regional or municipal — is a very resource-intensive way of influencing user behavior. This is especially true if the government's formal rules and policy are not congruent with the existing cultural norms, which reflect the way people normally go about solving daily problems. Despite recent efforts to decentralise and modernise Bolivia's forestry sector, many governmental organisations continue to operate in a culture characterised by top-down management styles. The historical account showed that when the formal rules created by such structures of government are imposed on local forest users, they are not likely to be effective.

To make the new regime more effective, government officials need to learn a different style of public management that is capable of involving forest users in a more constructive way in the sector's public policy process. This transformation process is about much more than just changing the law — it is about transforming a deeply rooted culture of governance. One should therefore be careful to expect too much, too soon from the Bolivian reforms.

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Notes

- 1 FAO, 1999; UNDP, 1998.
- 2 Bruce, 1998.
- 3 Government of Bolivia, 2000; Woodson, 2000.
- 4 Church, 1901:146, cf. Fawcett, 1909.
- 5 FAO, 2002.
- 6 Pacheco, 2002.
- 7 FAO, 2001.
- 8 Superintendencia Forestal, 2000; FAO, 2001.
- 9 Fifer, 1967.
- 10 Kohl, 2002.
- 11 Fifer, 1967.
- 12 Grieshaber, 1980:225.
- 13 Fawcett, 1910.
- 14 Bowman, 1910:191.
- 15 Riviere, 1892: 207.
- 16 Edwards, 1913: 125.
- 17 Mather, 1922.
- 18 Weeks, 1946: 552.
- 19 World Bank, 2001.
- 20 Urioste and Pacheco, 2001.
- 21 World Bank, 1993.
- 22 de Mesa, 2001.
- 23 de Janvry and Sadoulet, 1989: 1397.
- 24 Pacheco, 1998; Contreras and Vargas, 2001.
- 25 Becker and León, 2000; Pacheco, 1998.
- 26 The so called INRA Law 1715. INRA is the National Agrarian Reform Institute, the central government agency in charge of implementing the law.
- 27 Hecht, 2001.
- 28 Government of Bolivia, 1996a.
- 29 Government of Bolivia, 1996b.
- 30 The forestry law requires all logging activities to be in conformance with the national standards for sustainable forest management. This means that previous to receiving the logging permits the applicant must develop a forest management plan for a twenty year rotation period. The management plan must be signed by a certified forestry engineer.
- 31 Hernáiz and Pacheco, 2001.
- 32 Contreras and Vargas, 2001.
- 33 Andersson, 2002.
- 34 Cohen and Peterson, 1999; World Bank, 1998; Wunsch and Olowu, 1995
- 35 Andersson, 2003, Pacheco and Kaimowitz, 1998
- 36 Pacheco, 1998.
- 37 CIPEC, 2001.
- 38 Andersson, 2002; Contreras and Vargas, 2001; Hernáiz and D. Pacheco, 2001;.
- 39 Contreras and Vargas, 2001; Kaimowitz *et al.*, 2000;.
- 40 Winter, 1998.

Colonialism, hunting and the invention of "poaching" in the 19th and 20th centuries

William M. Adams

Summary. The development of ideas about conservation in the twentieth century was greatly influenced by colonial ideas about hunting. This paper discusses the significance of hunting to conservation ideas in colonial Africa, and the sometimes rather mixed ideas about poaching and hunting by Africans. It draws out the similarities between such debates and the contemporary discussion of community-oriented versus strict conservation strategies. It argues that arguments about narrative change in conservation need to take account of the diversity of ideas about people and nature, both in the past and today.

The origins of modern conservation

thought are deep and complex, but the colonial roots of much twentieth century thinking are widely recognised.¹ There were, for example, important colonial concerns about deforestation, climate change

Above all, it was the Victorian enthusiasm for hunting, and the heritage of British traditions of elite landowning and 'game management', that gave conservation its familiar shape.

and drought from the eighteenth century onwards, and game and forest reserves were created in a number of places.² Above all, however, it was the Victorian enthusiasm for hunting, and the heritage of British traditions of elite landowning and 'game management', that gave conservation its familiar shape. From such ideas the essentially preservationist

approach of the protected area became the dominant conservation concept of the twentieth century.³

As formal wildlife conservation was established towards the end of the nineteenth century in African territories, it drew closely on the European tradition of aristocratic hunting, with beasts reserved for the King and his lords, in descending order of priority. In Victorian Britain, the shooting of pheasants, grouse and red deer, and the

chasing of foxes with packs of dogs, became vital rituals of the landowning class, a mark of social achievement and the markers of a shared culture.⁴ In Scotland, the Highland Clearances from the 19th century onwards had driven smallholders to new lands in North America, creating the very real human emptiness celebrated by today's 'wilderness' enthusiasts. Victorian landowners hunted red deer in the barren hills they left behind⁵. Hunting in British colonial territories, especially in Africa and India, was tied-in by connections of class and wealth to this British Victorian world. In India, for example, the British took over and adapted elite Mughal hunting practices, especially tiger shooting from elephant back and the use of beaters. They added to them sports such as pig sticking, and they exported their enthusiasm for fox hunting as a sporting activity to India, Australia and parts of Africa.

An enthusiasm for hunting was by no means confined to the elite of the British Empire. It was shared by those newly wealthy from industrialisation in the USA. From the 1860s, wealthy young men from rich eastern industrial families had begun to frequent the Adirondacks to engage in the masculine pastimes of shooting and fishing. Their approach was an odd combination of British upper-class tradition and an attempt

to recreate a romanticised American 'frontier' experience (although often this was just a thin veneer over luxury tourism).⁶ This engagement of wealthy East Coast Americans in game conservation is epitomised by Theodore Roosevelt. He hunted in the Adirondacks and in Maine in the 1870s, and became a leading advocate of a manly outdoor life. In due course, he went west to hunt buffalo in Dakota Territory in 1884, and returned there repeatedly to hunt, shooting elk, bear, buffalo and cougar. Roosevelt is well known for his enthusiasm for the whole adventure of hunting, his keen delight in finding and killing game, and the broader pleasure in wilderness.⁷ He was one of many such elite hunters, and led the establishment of the Boone and Crockett Club in 1888, which lobbied for the establishment of a national zoo and the extension of the Yellowstone National Park (created in 1872).⁸

Sporting conservation

To the wealthy sportsmen of industrialised countries, conservation was a matter of self-control, of curbing unreasonable amounts of killing. In 1921, William Hornaday wrote of the USA "the great mass of worth-while sportsmen are true protectors and conservators, who sincerely desire the perpetuation of game and hunting sport, and the conservation of the rights of posterity therein".⁹ However, there were hunters who were just "game hogs", and they were "just as brutal, savage and relentless as it ever was in the worst days of the past".

The same argument inspired the hunting members of the Society for the Preservation of the Wild Fauna of the Empire, founded in London in 1903 to put pressure on the Foreign Office not to de-gazette a Game Reserve in the Sudan.¹⁰ Edward North Buxton believed the disappearance of 'game' from Africa was primarily the result of 'reckless shooting' and bloodthirstiness

(shooting of excessive numbers of animals).¹¹ An editorial in the *Saturday Review* in 1908 had attributed the decreases in game in Africa to big-game hunters and to rich and irresponsible young Englishmen amassing large game bags.¹² In an article in the SPWFE's journal, Sir Henry Seton-Karr argued that "British sportsmen, as a class, have done nothing in any wild country to reduce or wipe out any kind of wild big game".¹³

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Colonial conservationists saw the chief problem with European hunting in Africa (as in the USA) as primarily a failure of 'true sportsmanship', especially the killing of excessive numbers of animals, where "an otherwise sane man runs amuck".¹⁴ There were problems with hunters "whose sporting instincts are undeveloped"¹⁵, those "who get bitten by the 'buck fever', and who fire away far more shots than they need".¹⁶ There were problems too with white settlers, who in East Africa (as in the Nineteenth century in South Africa) treated game either as a subsidy for farm establishment, or as a pest. Settlers did not share the ideals (or the money or leisure) of the traditional traveling sportsman. When a motion was proposed to the Colonists' Association in Kenya in 1909 that restrictions on killing game in settled districts should be removed, one correspondent to the SPWFE wrote "I am of the opinion that under modern conditions, given trade in horns and skins, the fauna of the high open plateaux here would be completely extirpated within five years".¹⁷

Conservation and wilderness

American ideas of wilderness added a perverse element to the cocktail of ideas about people and nature in early twentieth



Figure 1. The African elephant has been a critical species in debates about conservation, hunting and poaching throughout the twentieth century. (Courtesy Juan Moreias).

century conservation.¹⁸ In Europe, the traditional meanings of 'wilderness' date from the time when people feared nature - feared its animals, the lawlessness of wild land. Beyond the tended fields and managed woods, where lawless men roamed and danger lay, anyone benighted or set upon would not find help. Wilderness and wildness were not seen as virtues, but as symbols of barrenness, of lack of improvement and lack of care for the environment. In the USA, the story that the new settlers told about themselves spoke in terms of the frontier, and a country carved from the wilderness. Indigenous Indian populations, which shrank before the onslaught of European disease and military power, were airbrushed from history and removed to reservations. The vast lands of the West were annexed by the state, and held for the public good for the resources they contained.

However, by the mid nineteenth century, in both Europe and the USA, the nature that remained was widely being seen as something to be treasured. The Romantic movement re-interpreted the brutishness of wild places as mystery, and the savagery of nature became a source of won-

der and moral instruction. The English gentleman's country park, cleared of untidy peasant cottages, was landscaped to fit an aesthetic of pastoral beauty. By the end of the nineteenth century, Americans were worrying about the impacts of the closing of the Western frontier on the pioneer spirit that they believed defined the American national character. Early US conservationists, who saw nature under threat, expressed their concern in terms of the very 'wilderness' that had been so recently conquered. They came to believe that wilderness was precious, a source of wonder, something that demanded urgent conservation.

Settlers have always struggled to roll back the wilderness, creating farmed and fruitful lands from the bush.¹⁹ Settlers were therefore, from the first, the enemies of 'pristine' nature, and the whole economic development process the destroyer of the wild or natural in nature. In the twentieth century, conservation developed in Europe and North America as a reaction against the impacts of intensive agriculture as well as industrial pollution, tourism and other features of economic growth. It is for this reason that protected areas are almost always portrayed as the sanctuaries of wild, un-transformed nature. In North America, the clearance of indigenous people from the land has made possible a relatively efficient separation of settled and 'wilderness' land, entrenched by the passage of the US Wilderness Act in 1964. Elsewhere the attempt to impose a similar separation is far more problematic

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people in such supposedly 'wild' places has seemed an increasingly significant conceptual and practical problem. As people have been discovered in, or have intensified their use of land set aside for nature in reserves and national parks, those people began to be seen as unnatural, threatening the balance of nature.²⁰ Most indigenous and pre-colonial conservation practices and protected areas went unrecorded, and most are forgotten by contemporary conservation planners.²¹

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action, but in doing so it outlawed numerous rural livelihoods. In the USA as much as in Africa, it reclassified hunters as poachers, wood-cutters as law-breakers, and small farmers as the destroyers of natural vegetation.²² Local subsistence and market uses of living resources in 'natural' or 'wild' areas has been judged a problem not only because it is done in

supposedly 'pristine' nature, but also for the manner of such hunting (the whole issue of the cruelty of low-technology hunting and trapping) and because it has not been based on scientific analysis of sustainable levels of harvest.

Since 1950, conservationists have tended to imagine that ideas of wilderness are universal, and are bound to touch somewhere on indigenous ideas about nature. There is no reason to expect this to be the case, because ideas about the value of the wild are the products of human culture.²³ Ideas of wilderness as something wonderful are culturally specific. A conservation ethic based on the standard Western transcendental and Romantic idea of wilder-



Figure 2. Arguably, humans have been the most discussed and the least understood species in conservation through the twentieth century. (Courtesy Juan Moreias).

ness, for example, can be quite meaningless to people of different tradition and ethnicity.²⁴ The concept of 'wild' nature, like 'proper hunting' is a product of thought among certain classes of people in industrialised countries but has been adopted wholesale by the conservation movement.

Hunting, and the romance of "poaching"

European hunters abroad took with them a long tradition of opposition to subsistence hunting, and a long tradition among British and other European landowners of

attempting to stop poaching. In medieval England, poaching was a capital offence, and even in Georgian England, the Black Act had condemned poachers of the

In Africa, subsistence hunting was generally seen to be haphazard, inefficient, wasteful and cruel. Colonial observers thought it distracted rural people from gainful employment in cash crop production or wage labour. It was widely proscribed by formal law, and the problem of poaching became an increasingly important issue in conservation as the twentieth century progressed.

landowner's game to transportation, or worse. The Victorian sporting estate had generated a complex and extensive hierarchy of employees devoted to protecting their master's game from the depredations of the landless and lawless poacher. In Africa, subsistence hunting was generally seen to be haphazard, inefficient, wasteful and cruel. Colonial observers thought it distracted rural people from gainful employment in cash crop production or wage labour. It was

widely proscribed by formal law, and the problem of poaching became an increasingly important issue in conservation as the twentieth century progressed. R.W.G. Hingston represented the dominant view of sporting conservationists in the first half of the twentieth century, when he told the Royal Geographical Society in 1931 that that the decline of the African fauna was primarily due to 'the native hunter'.²⁵

This portrayal of the destructiveness of local subsistence hunting was only part of a more complex set of ideas about poaching. There was a certain romantic flavour to the enterprise of the lone poacher. Colonial attitudes were influenced by an affectionate romantic exasperation felt for poachers in Britain in the early twentieth century. In the spirit of Robin Hood, the skillful lone poacher, outwitting the blundering forces of the law to put meat on

the table, fitted a familiar and popular literary stereotype, for example in Richard Jeffries' book *The Amateur Poacher*, or in the way John Buchan portrayed his sporting gentlemen poaching salmon and stags from hapless neighbours in the fictional adventure *John Macnab*.²⁶ Poachers in colonial Africa were also sometimes regarded with paternalistic tolerance for their sad lack of perception of the damaging effects of their undisciplined ways.

Hingston reflects this tolerance of individual peasant subsistence hunting, writing "when he hunts as an individual with his primitive weapons with the object of killing everything obtainable he probably does not cause any greater destruction than does the discriminating sportsman with his modern weapons". In a similar vein, Edward North Buxton (founder of the Society for the Preservation of the Wild Fauna of the Empire in 1903) pointed out in 1902 that animals were the Africans 'birthright', and that "from time immemorial the destruction caused by the indigenous inhabitants has not appreciably diminished the stock".²⁷ In delegation by the Society for the Preservation of the Fauna of the Wild Empire (SPFE) to lobby the British Colonial Secretary in 1905, he argued that it would not be either expedient to interfere with "ancestral methods" such as pitfalls and traps that had been used "for an indefinite period".²⁸

"Personally, I am inclined to think that Statesmen and Colonial Governments have often given perhaps an undue attention to the rights of natives compared with other matters".

In the 1920s and 1930s, the Colonial Office and individual Governors were sometimes a more sensitive to the needs of local hunters than conservationists wished. In 1928, the Society for the Preservation of the Fauna of the Empire proposed (through the Colonial Office) that Forest Reserves in Nigeria should be



Figure 3. The incorporation of poverty alleviation and the business sector into conservation programmes is a key feature of the 'new conservation' of the 1990s. A farm worker at Flower Valley, a commercial flower farm harvesting wild blooms in the South African Fynbos (www.fauna-flora.com/around/africa/flower_valley.html). (Courtesy Juan Moreias).

made into reserves "for the indigenous fauna", but this was rejected by the Governor because preservation would interfere with the hunting rights of the considerable number of people living in the Forest Reserves.²⁹ At the end of his tenure as secretary of the SPFE, C.W. Hobley noted that in the Sudan and in some parts of West Africa, there was a school of thought which would "recognise vested rights of natives to the Elephant".³⁰ Sir Peter Chalmers Mitchell commented "Personally, I am inclined to think that Statesmen and Colonial Governments have often given perhaps an undue attention to the rights of natives compared with other matters".³¹

The limits of tolerance

The tolerance of African hunting to which romantic ideas about poaching gave rise was easily exhausted. In particular it was dispelled when hunters achieved efficiency in killing. Sir Henry Seton-Karr, a promi-

nent hunter and founder member of the SPWFE, squarely blamed the problem of diminishing game at the door of the 'depredations' of natives (along with their fellow ill-doers, unsporting settlers).³² Hingston argued that "when natives hunt collectively, they then have the power to cause serious depletion through wholesale and indiscriminate methods employed". There is no romance to such hunting³³. The use of guns by African hunters was particularly problematic. Buxton urged that "special care should be taken to prevent modern weapons getting into the hands of the natives", and other members of the early SPWFE delegation thought

that even natives without guns should be prohibited from hunting because the effectiveness of their hunting techniques had already been improved by colonialism.³⁴

Had some traditional balance between ill-armed and relatively un-ambitious indigenous hunters and abundant populations of their prey had been upset? Certainly it was obvious by the first decade of the twentieth century that colonialism was triggering diverse economic and social change. Buxton observed that *Pax Britannic* had created new opportunities for killing game. There were Kamba hunters "at every water hole" on the Athi Plains because the Maasai were not there to keep them away, and "everything that walked was killed with poison arrows". Responsible colonial government should step in to control such hunting: "as we allow the natives to kill game to a certain extent by preventing fighting among them, we should also prevent their trapping and killing on a large

scale".³⁵

Most commentators controlled romantic sentiment and advocated strict control of native hunting. Sir Alfred Sharpe, acting commissioner of the Central African Protectorate after a number of adventurous shooting expeditions, wrote to the SPWFE in 1905 that "there seems to have been a general tendency, while rigidly restricting Europeans from shooting big game, to leave the native free to slaughter all he wishes without let or hindrance". Sharpe trumpeted the success of policies in the protectorate of British Central Africa. These had effectively ended native hunting, by enforcing a native gun tax (such that whereas 12 years before "every native carried a gun², now not one in a thousand owned one), making natives subject to same licenses as Europeans (so that few took out licenses or shot game), and persuading District Magistrates to punish natives found guilty of shooting game without a license.³⁶ A correspondent from South Africa commented "of course it is difficult to watch all the natives, but the constabulary have instructions to do all they can".³⁷ The SPFE Deputation to the

"An Indian or other native has no more right to kill game, or to subsist upon it all year round, than any white man in the same locality. The native has no God-given ownership of the game of any land, any more than its mineral resources; and he should be governed by the same laws as white men"

Colonial Office in March 1930 urged "a close watch" on native hunting "to prevent indiscriminate slaughter of game by natives".³⁸

The dominant sporting code from which so much conservation stemmed in the first three decades of the twentieth century had little time for indigenous hunting, whether in the British Empire or

indeed in North America. In his 15 point "sportsman's platform², which he dissemi-

nated widely in 1909, William Hornaday wrote "An Indian or other native has no more right to kill game, or to subsist upon it all year round, than any white man in the same locality. The native has no God-given ownership of the game of any land, any more than its mineral resources; and he should be governed by the same laws as white men".³⁹ In the slightly uneasy post-war and pre-independence years, Mervyn Cowie, Director of the Royal National Parks of Kenya, wrote "the Judiciary must be convinced that the disastrous destruction of God's great beasts by ruthless poachers is a crime against the rights of posterity, deserving really effective punishment".⁴⁰

Changing narratives in conservation

After the Second World War, the problem of illegal hunting came to the very centre stage in conservation debates. Poaching became more extensively commercialised, and the use of cheap but arbitrary killing techniques such as wire snares became more widespread. The impact of poaching on the populations of species such as the rhinoceroses and elephant became a headline issue for global conservation.⁴¹ The methods used by poachers were now seen universally by conservationists as not only highly effective, but not 'traditional': there might be romance and a sense of fair play for some in the idea of an elephant hunter armed with a bow and arrows, but there was arguably none in a wire snare. Moreover, any paternalistic benevolence in accounts of poaching was buried beneath a welter of humanitarian compassion for maimed animals. Still photographs and film provided powerfully tools for conservationists to express the cruelty, futility and destructiveness of the poachers' trade.⁴² Any possibility of tolerance of local subsistence hunting was lost, as conservation discourse focused on the need for more protected areas, tighter enforcement of

laws, and end to poaching and trade in wildlife products.

The strict defence of protected areas was, however, a conservation solution that in turn created its own problems. Debate about the question of the role of people in parks, and the effects of parks on people, began in the 1970s as part of a wider debate about "community conservation", or "community-based conservation".⁴³

UNESCO's Biosphere Reserve concept made provision for human use of buffer zones, while in 1975, IUCN passed the Zaire Resolution on the Protection of Traditional Ways of Life, calling on governments not to displace people from protected areas and to take specific account of the needs of indigenous populations, and in the same year the UNESCO World Heritage Convention made specific provision for the conservation of areas of historical and cultural significance.⁴⁴ The principles of community-oriented park management were discussed at the World Parks Congress in Bali in 1982, and developed at Caracas in 1992 and Durban in 2003. Following the Caracas Congress in 1992, IUCN published a policy on Indigenous and Traditional Peoples and Protected Areas.

There were also changes in the way individual countries dealt with people and conservation. Thus in Canada and Australia there were significant changes in attitudes to indigenous land rights.⁴⁵ Most Canadian national parks were designated before the federal and provincial governments acknowledged the existence of Aboriginal right and title.⁴⁶ Attitudes began to shift in the 1970s, in response to rising Aboriginal political awareness, and to the ground-breaking Berger inquiry into the Mackenzie Delta oil pipeline, and then the

Inuvialuit Final Agreement in 1984. In 1972, the Canadian Parks Service introduced the idea of National Park reserves, to be treated as national parks pending the completion of land claims. In East Africa, experience at Amboseli National Park through the 1970s, subsequently developed into the Wildlife Extension Project, experience from which in turn led to the establishment of the African Wildlife Foundation's Tsavo Community Conservation Project (1988), the Kenyan Wildlife Service Community Wildlife Programme and the USAID-funded COBRA project (Conservation of Biodiverse Areas), in 1991, and the African Wildlife Foundation's "Neighbours as Partners" Programme.⁴⁷

Alongside the reconsideration of the role of people in protected areas has gone a renewed interest in conservation in terms of "sustainable use". This phrase includes three separate ideas: the fact that wildlife use is an imperative or choice of people (particularly the poor) in the pursuit of their livelihoods; the issue of how populations and ecosystems are to be used and



Figure 4. The creation of micro-enterprises based on harvested wild species (such as these wood tourist carvings) offers important opportunities for new livelihoods, but raises key questions about the sustainability of harvests. (Courtesy Juan Moreias).

managed to achieve biological sustainability, and the possibility that use can provide incentives to conserve biodiversity. After much debate, IUCN launched the Sustainable Use Initiative in 1995, implemented through a series of regional groups.⁴⁸ IUCN members adopted a policy on the sustainable use of wild living resources at the 2nd World Conservation Congress in Amman, Jordan, in 2000. This recognised that, if sustainable, the use of wild living resources was an important conservation tool. Such an approach would allow conservationists to try to align their efforts with the economic, social and cultural pressures that drive human consumption, working with people to use and derive benefits from species and ecosystems while sustaining biodiversity.⁴⁹

The community approach to conservation is part of what David Hulme and Marshall Murphree describe as “the new conservation”⁵⁰, reflecting the new development orthodoxy of the 1980s about the market as a driver of economic betterment, the need to slim down bloated state bureaucracies, and the place of ‘communities’ in

“Policy narratives become culturally, institutionally, and politically, embedded in the thinking of policy actors at all scales—from politicians, through aid and government bureaucrats, scientists and technical consultants through to communities—for all of whom they come to frame understandings of problems and possible solutions.”

development. Such thinking offered a significant challenge to much existing top-down conservation policy, and particularly to the arbitrary establishment of protected areas, the eviction of weak and politically marginal rural people.⁵¹

Such shifts in dominant policy narratives are not unusual.⁵² Policy narratives become culturally, institutionally and politically embedded in the thinking of

policy actors at all scales from politicians, through aid and government bureaucrats, scientists and technical consultants through to communities, for all of whom they come to frame understandings of problems and possible solutions. Such narratives can only be overturned by plausible counter-narratives, as tightly focused and well-argued as those they replace.

It has been suggested that the late 1990s saw a new counter-narrative, with arguments against the community approach, amounting to a “back to parks” movement, led by those committed to the survival of species above all other goals.⁵³ There is evidence that the “protectionist paradigm” is simply being reinvented.⁵⁴ Many conservationists are sceptical that human use of living resources will ever be sustainable.⁵⁵ Arguably, only a preservationist strategy offers any chance for species biodiversity in the twenty-first century. Rather than pursuing a community-based approach, conservation needs a U-turn, back to parks, for nature’s “last stand”.⁵⁶

Those who argue that conservation must focus on strict protection are making arguments very similar to those made by their colonial predecessors early in the twentieth century. However, those who advocate a community-based approach, and who point to the implications of strict protection strategies on the livelihoods of the poor also have precursors in the early colonial days of conservation. The merits of these different strategies need to be argued on their own terms, and no single solution is likely to be applicable in all circumstances and acceptable to all stakeholders. Beneath contemporary ideas in conservation lie complex streams of thought about the right relations between people and nature. Understanding the evolution of those ideas in the past may help us understand their power, and their utility, in the future.

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Conservation of dryland biodiversity by mobile indigenous people—the case of the Gabbra of Northern Kenya

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Summary. The Gabbra are a mobile indigenous people of northern Kenya. Their livelihood strategy, through which they survived for centuries in one of the harshest environments on earth, managed to conserve biodiversity through a complex and sophisticated natural resource management system that includes the raising of mixed livestock species; the practice of transhumance (mobility); the declaration and respect of “range reserves”; the declaration and respect of use rules for plant species with specific economic and cultural values; and a variety of rules and practices aiming at water conservation and at the protection of water point environments. This paper discusses these practises and their biodiversity conservation results. A number of phenomena that place these practices in jeopardy are mentioned in the paper, together with recommendations about recognising, respecting and strengthening, rather than diminishing, a management system that beautifully stood the test of time.

The rangelands of Eastern Africa occupy a very large proportion of the land area of Kenya (88%), Tanzania (83%) and Uganda (56%) as well as almost all of Somalia, Eritrea and Djibouti. Rangelands harbour a very large number of plant species (the actual total numbers is still unknown). For Kenya, the number of plants species is estimated at 7,500, out of which 265 are endemic. Out of this total, about 1000 species are of particular

concern for their actual or potential economic importance and/or endemism.

Inhabitants of rangeland make use of a wide variety of plants—ranging from large trees to shrubs and herbs—for food, fodder, fuel-wood, timber, fibre, dyes, handicrafts, gum and resins, and medicine. The relative importance of plant species varies from one locality to another and from one culture to another. In this paper we discuss the uses and associated conservation patterns of natural resources by Gabbra pastoralists in the Marsabit district of Northern Kenya.

The Gabbra Pastoral Nomads of Northern Kenya

In Kenya, the Gabbra are mostly found in the Marsabit district, at the extreme north of the country, bordering Ethiopia. They share land with the Borana and Rendille peoples, but people of Ariaal, Samburu, Burji, El-Molo, Turkana and Somali origin also live in the region. All are predominantly pastoralists, except the Burji (agro-pastoralists) and Elmolo (mainly fishermen along Lake Turkana). The land use pattern of Marsabit's residents is predominantly pastoral and agro-pastoral, with about 85% of the population practicing nomadic or semi-nomadic pastoralism. Agro-pas-



Figure 1. Mobile people make use of different ecological niches in the landscape. (Courtesy Boku Tache)

toralism is concentrated on 3% of the total land area, mainly in the highlands of Mt. Marsabit, the Hurri Hills and Mt. Kulal.

Over the years, natural resources in these areas have been subjected to increasing pressure. due to a variety of factors. Of primary importance has been the privatisation of some land, traditionally held in common, for crop production activities. This has affected even marginal areas not suited for agriculture. Government policies have consistently favoured crop production at the expense of pastoralism, and state and development agents have promoted site-focused planning and the sedentarisation of mobile communities. The pastoral mobility routes have also been disrupted by the establishment of protected areas, such as the Sibiloi National Park and Marsabit National Park, where herding is not allowed. This has led to a major loss of dry season grazing areas for the Gabbra. Compounding this, there has been a significant increase in human population. The Gabbra population in Kenya numbered 11,000 in 1969. Presently, according to the 1999 census, it amounts to over 45,000 people.

Despite the above, about 40% of the land in Marsabit can still be described as under utilised, mostly because of un-even distribution of water points

Government policies have consistently favoured crop production at the expense of pastoralism, and state and development agents have promoted site focused planning and the sedentarisation of mobile communities

but also, at times, because of inter tribal disputes. As a whole, the district is characterised by recurrent drought, famine, endemic insecurity, and poor infrastructure and social services. To use a modern label, most of the local people are "abjectly poor". As a matter of fact, there is livelihood anxiety among the local communities

and the Gabbra have been increasingly dependent on relief aid, which is available in the form of food relief or food for work initiatives run by the Kenyan government and the World Food Programme. Since 1972-73 different types of food aid have been provided to the Gabbra on a more or less regular basis. The situation became particularly critical in the mid 80s, when relief aid was provided for most of the year. The year 1984 is still remembered as *Olla Dima Suga* (the drought of yellow maize). Overall, the Kenyan Food Security Committee consistently ranks Marsabit as the second most vulnerable district in the country, after Turkana. The district is also ranked as one of the poorest in the country.

The Gabbra live in an area about the size of Switzerland (40, 000 km sq.),¹ which covers part of Northern Kenya (Marsabit district) and parts of southern Ethiopia—one of the harshest dryland environments on earth. People, livestock and wild animals are adapted to conditions of extreme heat and aridity. Their livelihood depends on a few strategic characteristics, which are interdependent, regulated by traditional management practices and stood their ground for centuries if not millennia. Among those, the following are crucial: 1. mobility; 2. diversity of raised livestock species and 3. a well-functioning and socially respected management system. Mobility enables the Gabbra to utilise the limited and spatially located range resources as efficiently as possible. The diversity of livestock species, such as camels and goats (browsers), and sheep and cattle (grazers) allows them to exploit different niches in the environment and ensures them a supply of milk, meat, blood, hides, skins and means of transportation (camels and donkeys) under difficult and changing situations. A well-functioning and socially respected management system allows the Gabbra to main-



Figure 2. Gabbra families (*olla*) migrating from a base camp to a different territory over a long distance. (Courtesy of Chachu F. Ganya)

tain the rules of rational and proper use of resources—an indispensable element in an environment dominated by scarcity and unpredictability. These include the declaration and respect of “range reserves”; the declaration and respect of use rules for plant species with specific economic and cultural values; and a variety of rules and practices aiming at water conservation and at the protection of water point environments. All these factors, together, are crucially important to conserve the local biodiversity.

Livestock diversity and biodiversity conservation

The Gabbra keep mixed livestock species (camel, cattle, sheep, goats and donkeys). In arid lands, species diversity is a crucial element of livelihood because different livestock species have a different tolerance to water and forage stress. Camels are capable of using grazing areas fairly distant from water points, but cattle need to be located nearer to them. Cattle are affected more by watering distance, as they need to be watered every second day. Small-stock are affected to a lesser degree and can be without water for about four days. Camels may roam more or less freely over the range as, traditionally, they are watered only every 10-11

days and can thus graze up to 50 km from a water source.² Rearing more than one species of livestock, each having different management and environmental requirements, grazing levels and habits, feed preference, and different levels of tolerance to different stresses, is a flexible and opportunistic strategic choice, which exploits the unpredictable availability of natural resources.³ In this sense, the camel is possibly the most important livestock species, uniquely adapted to hot and arid environments. It is such a valued animal that the Gabbra place it next to god in their social hierarchy.

The possession of loading camels enables the pastoralist households to wander widely in pursuit of pockets of scarce pasture and grazing while relying on water drawn from sources up to 70 km away from base camp.⁴ The Gabbra women and unmarried girls take camel caravans to water on journeys that might take up to two days and in which they get physically stressed from long-hours of walking without rest and food. The camels, however, enable them to move with their households relatively rapidly and provide them with milk for long periods, including during dry spells. Importantly, the camels hardly damage the environment, in contrast to cows and other animals with hooves. Their soft feet do not scuff up the top soil and do not expose it to erosion.



Figure 3. Gabbra women moving their base camp. (Courtesy of Chachu F. Ganya)

They feed on various types of vegetation, and particularly on leaves, hence sparing the soil-conserving grass.⁵

Mobility and biodiversity conservation

The Gabbra practise three specialised forms of nomadism: *qayath*, *kunn* and *foora*. *Qayath* is the migration of base camp and its livestock to far away territories at the beginning of the rainy season. *Kunn* is also long distance migration but in the reverse sense, from wet season pastures back to permanent water points. *Foora* entails an opportunistic movement of the 'dry' part of the herd (i.e. the animals that do not give milk) to exploit various grazing and water resources.

Qayath and *kunn* systems involve movement of entire livestock and base camp to and from wet season pastures. In *qayath*, livestock and base camp move towards lush pasture. But the movement is not towards the same areas visited in the preceding rainy season. The Gabbra return to the same areas only after several years, giving time for the environment to regenerate and recover from past use. *Qayath* also applies to movement away from insecure drought reserve pastures areas to more secure ones.

...a mobile lifestyle enables the dispersal of seeds and the regeneration of arid land vegetation... the Gabbra wander from one point to the other even before being pressured by the local pasture conditions— simply in order to ensure that the land is replenished for the future utilisation.

Kunn is movement of entire livestock and base camp back to dry season water points. Unlike *qayath*, *kunn* is also used to describe emergency movements, when pastures and seasonal water sources dry up rather suddenly. Such movements can be strenuous and can last several days without the comfort of water points.

The *foora* system is a practice of breaking up the livestock into a milk herd kept around base camp and a dry herd, which moves to pasture reserves, sometimes as far as 50 km away from base camp. Young boys and girls take care of the herd in the *foora* under the guidance of at least one adult.⁶ Most of the pastoral groups in Northern Kenya practise *foora* (i.e. herd-splitting) as a coping strategy. This reduces the competition for forage and water resources between herds and optimises pasture utilisation. Practicing *qayath*, *kunn* and *foora* helps the Gabbra to reduce overgrazing by limiting the concentration of livestock in drought reserve, wet season pasture and dry season pasture. The mobility pattern enhances restoration and stabilisation of the local ecological conditions.

One of the most interesting indirect benefits of a mobile lifestyle is that it enables the dispersal of seeds and the regeneration of arid land vegetation. Nomadic grazing allows nitrogen to be returned to the soil over dispersed areas. When the land is grazed for relatively short periods it generates rich grass. Hoof pressure activates the process through the crushing of the grass and gravel. As a matter of fact, the Gabbra wander from one point to the other even before being pressured by the local pasture conditions—simply in order to ensure that the land is replenished for the future utilisation.⁷ In this sense, mobility is *consciously* used to enhance the growth of arid land vegetation.

Camels, goats, sheep, cattle and donkeys feed on diverse plant species and move different varieties of seeds from one area to another, with preference to the most palatable ones. The seeds of consumed plants get treated in the rumen of livestock and are deposited over large areas and/or in the night enclosures where the animals camp. In the enclosures there is

plenty of manure and urea, which provide an optimal environment for seed to germinate and grow with the onset of rains. Seeds that commonly grow in livestock enclosures are *Acacia tortilis*, *Sueda monica*, *Ziziphus mauritiana*, *Indigofera spinosa* and *Cordia sinensis*, among many others. Also, along the livestock trails, the pressure of the hooves creates micro-environments for seed collection, germination and establishment.

The seeds of consumed plants get treated in the rumen of livestock... the pressure of the hooves creates innumerable micro-environments for seed collection, germination and establishment... seeds are dispersed and pasture is maintained.

Shortly after the rainy season, the grazing areas sprout up with a varied vegetation. Whether or not deliberately practiced to this end, livestock mobility is thus an important medium through which seeds are dispersed and pasture is maintained.

Access rules, "range reserves" and biodiversity conservation

The Gabbra people are subdivided into five phratries, or sub-tribes, each encompassing 50 to 100 households related to specific grazing zone and movements.⁸ All sub-tribes have an intimate knowledge of plant types and distribution in their territory. Their very existence is dependant on this knowledge. The grass, herbs, shrub, and trees feed the livestock, which supply herders with milk, meat, blood, skins, a medium of exchange, a repository of wealth, and the basis of their social organisation. Plants are of utmost importance in terms of livestock forage, but they are also essential for use as fuel, in construction, and to craft the material elements of the local culture. In fact, different types of plants are used by the Gabbra for numerous ceremonies and rituals conducted throughout the year.

Pasture and water are vital components of the arid land ecosystem, which require prudent management and conservation. The Gabbra manage their pasture through



Figure 4. In arid, non-equilibrium ecosystems moister areas of scrub vegetation are an important ecological niche. (Courtesy of Chachu F. Ganya)

controlled grazing. They move from the wells and other permanent water sources as soon as it rains in order to preserve the pasture closer to home (and the water source) for the times of real need. Similarly, they move from wet season grazing areas as soon as the water pans are dry to avoid overgrazing.

The rules regarding wet season and dry season grazing areas are strict, enforced through fines and generally respected. Restrictions apply to grazing, wood gathering and tree cutting. Fines are also imposed on intruders from other areas who access pasture without permission. The range "reserves" can be large or small. Large reserves can be closed seasonally, yearly or even be for many years, but it is extremely rare that they are closed permanently. Small (micro) reserves are often established around settlements and water points, while larger

range reserves usually comprise:
areas closed during the wet season to ensure the availability of good forage during the dry season;
areas protected during normal times for use during droughts (drought reserves);
areas protected to allow degraded zones to regenerate.

The Gabbra holy places include single groves of trees, unique tree species, special hills and hill tops (e.g., the mountain of Forole), areas around water points and unusual landscapes. In the Gabbra territory alone there are over 100 such sacred sites!

Reserves associated with sacred or ceremonial sites are of particular importance for biodiversity conservation. Overall, cultural rules have major consequences for natural resources. The Gabbra holy places include single groves of trees, unique tree species, special hills and hill

tops (e.g., the mountain of Forole), areas around water points and unusual landscapes. In the Gabbra territory alone there are over 100 such sacred sites! These sites are protected and preserved by each sub-tribe and their use is allowed only during ceremonies. It is also remarkable that, while attending the frequent ceremonies and rituals, few animals accompany Gabbra households.

Forole is an important cultural site of Galbo— a sub-tribe of the Gabbra, and tradition demands extremely strict environmental conservation measures for such sacred areas. It is customarily forbidden to hunt in Forole, and no plants or parts of plants may be removed from the holy sites. Even a fibrous twig used as a toothbrush has to be left behind before one leaves the area. No herding sticks or traditional twigs are cut there. These restrictions are instituted in order to ensure survival of flora and fauna of this geographically small area that is periodically (every 7 years or so) subjected to visits by large

groups of people and their livestock for religious/ceremonial purpose (“the people’s pilgrimage”). In the absence of such wise rules, this area would have been



Figure 5. Different ecosystem niches are preferentially used by diverse livestock species. (Courtesy Boku Tache)

degraded long ago and, likely, its unique flora and fauna would have been lost. Ritual and sacred places thus act as *in situ* gene banks and conservation sites for many species of flora and fauna. Although these areas are small compared to total landscape, the cumulative area of numerous such reserves is very significant. Despite changing times, these places remain sacred today.

Use rules and biodiversity conservation

For some pastoral communities dependence on specific tree and shrub species can be extremely high. In some cases, species are so valued that they are “protected” in order to sustain their production for valuable religious, socio-cultural or economic uses. The Gabbra ensure this by setting use limits (*quantity*) and devising rules on the *manner of use* of many grasses, shrubs and trees in their territory. For example, they have taboos against killing some trees, in particular those that

relate to rituals or demarcate ceremonial grounds and shrines. Other trees are protected not for ritual reasons, but because they are seen as valuable resources, and people make a conscious effort to limit their exploitation. These are some examples:

- A fully-grown *Acacia tortilis* called *Korma* (bull) is protected because it produces highly nutritive pods consumed by sheep and goats. Complete cutting is not allowed, and at least one of its branches is always left intact to ensure the plant's regeneration.⁹
- Certain trees and shrubs can only be harvested four times in a year, during the propitious months (*Yaka* – March; *Faite* – June and two *Somder* – September and October). These include *Erythrina burtii* (*wolena*) a soft wood plant used for making traditional stools; *Grewia bicolor* (*haroresa*) and *Sansevieria robusta* (*algi*) which provide materials for building and thatching a bridal house, and *Asparagus africanus* (*ergams*) which provides the material for making the bride and groom's milk container.
- Other culturally important plants are *Salvadora persica* (*adhe*), *Grewia tenax* (*deka*) and *Balanites egyptiaca* (*badh*). *Salvadora's* twigs are used to brush teeth and the plant is not supposed to be cut by any metallic object, used as fire wood, or for building livestock enclosures. Because of its demand for maintaining community oral hygiene, this plant is accorded special protection status. Its harvesting is done by breaking off only that part of the twig that is required. Elders say that "*ibedhel bias dhuo niti adayu nam riga adhe budo bafatet ir jir*" (instead of taking an unpalatable drink for breakfast, one is better off chewing on a *Salvadora* tooth brush) and they refer to *Salvadora* as milk (*adhe anana*).

Salvadora is also used for the treatment of retained after-birth in livestock. It enjoys a similar protection status among the Gabbra, the Samburu and the Rendille.

- *Grewia tenax* and *Balanites aegyptiaca* are useful sources of fruits, which are extremely scarce in the desert environment. *Grewia* is not used for firewood nor are its straight sticks used for constructing traditional huts. *Balanites* is so revered that nobody dares to sit under its shade before putting a tuft of grass on his/her head. All these plant species have multiple uses, including cultural rites, food and even medicinal applications.
- Among the Samburu, *Zanthoxylum chalybeum* (*loisuk*) and *Myrsine africana* (*seketet*) are harvested / collected only by elderly men and women because of the belief that young people, in their hurry, destroy the plant by uprooting them.
- The Gabbra protect and conserve medicinal plants through complex taboos and mystifications. Only trained herbalists are allowed to harvest, process and prescribe the herbal remedies. The roots of *Albizia antihelminthica* (*hawacho*) are used as a de-wormer for both livestock and human beings. Uprooting and ring barking of medicinal plants are not allowed, and herbalists only dig one side of the plant or remove a section of its bark by peeling upwards to get the required portion. It is a taboo to harvest medicinal plants (dig out roots or de-bark) for the second time if there is evidence of fresh harvest. It is believed that such plants have no potency as the first harvester has taken away the medicine.
- Among the Gabbra and Samburu, the

Strong cultural beliefs greatly contributed to preservation and enhancement of biodiversity conservation in the drylands.

traditional herbal knowledge is a well-guarded secret and can only be passed on to favourite sons and daughters in the family. For the young to be able to practice, they must go through a ritual ceremony, and receive blessing through spitting on their hands, those same hands that will dig the potent herbs and treat the sick. Unless such ceremonies are performed the herbs will not have potency.

Such strong cultural beliefs greatly contribute to the preservation and enhancement of biodiversity conservation in the drylands. One may even wonder whether these rules were not purposefully devised by clever elders who—through taboos and mystic beliefs—succeeded in making individuals accountable to society for the destruction of plants of medicinal and cultural value. Unfortunately, such plants are now being increasingly harvested and rising demand and cultural change seem to be overpowering the traditional rules. There are no known efforts to propagate and process these plants for commercial purpose with a view to alleviate poverty in the region.

Rules and practices about water and biodiversity conservation

Water forms the basis of life for the nomadic Gabbra. It is available in plenty only during the rainy season, while in the dry season the Gabbra have to travel vast distances to collect this precious resource. During such times, women bear the brunt of shortages more than men because it is their responsibility to fetch water for the household.¹⁰ Water saving practices are extreme. Clothes are only occasionally washed and baths are rarely taken. Even hands are not regularly washed, and sometimes, if it becomes necessary to do so, only with the urine of camels and cows. Tea is prepared using minimal amounts of water. Meat is roasted instead



Figure 6. The limited access to permanent water points conditions the Gabbra to use the water that collects on the ground surface after the rains. (Courtesy of Chachu F. Ganya)

of boiled, especially by *foora* people. To cope with thirst while water is scarce people drink only milk or livestock blood. Young animals, (i.e. calves, kids and lambs) unable to move to water points with their mothers are usually kept in thatched, dome-shaped kraal (*waab*) to avoid exposure to the sun and minimise the requirement for water. The availability of water regulates the size of the herds as, when the shallow wells dry up, only limited numbers of goats and sheep are allowed access to water. The rest of the livestock are conditioned to move elsewhere.

The water points consist of springs, wells, surface pans, dams, and rock catchments. Temporary waters such as seasonal *laga*, rain pools, puddles or ponds are regarded as a communal resource in the same way as natural pasture, and they are subject to rules and regulations as is the case for natural pasture. Nobody has personal ownership claims or control over them, but *hara* (man-made pans), and some natural pans (*gottu* or *dholollo*) and rock catchments (*qarsa*) lasting more than a month or two, are fenced and are gov-

erned by rules. The rules are set by a 'well council' or its appointee (who, however, has no inheritable right), and the water point is fenced-in by thorn bush enclosures that must be maintained. Silting may be a problem and de-silting is sometimes done using hand tools, human labour and occasionally draught/pack-animals. The water rules minimise contamination through practices such as washing and/or bathing or through the urine and faecal matter of the livestock. Watering of livestock is instead done by using *nanniga* (watering troughs) or *meeri* (man-made, sometimes filtered, extensions that protect the main water body, improved as watering spot). Transgressors who damage the pan of the tribesmen (*hara_borana_balees*) are fined/ punished by the relevant council of elders.

The wells are the most important source of water and the only form of individual ownership of fixed resources among the Gabbra. Shallow wells known as *mado* or

...cutting down trees or lopping their branches within the recognised area of a well is tantamount to shaving off the hair of someone's wife...

adadi and deep wells known as *tula* are owned by certain individuals said to be the *confi* (owner/father) of the well, who can pass on the right of ownership to his eldest son. The ownership of the well cannot be lost even if the owner has moved away in search of grass in other distant areas or if

the well collapses through disuse and is re-excavated by another person. Although individuals can own them, the wells are held in trust for the general good and the owners are basically administrators of an object for public utility. All other people have the right to water their animals in these wells and this is done free of charge as long as the access right is negotiated successfully and secured through the *abba eela* (father of the well), or *abba heerega*

(father of watering schedule) or *jarsa eela* (well council). Thus, up-keep, control, utilisation and maintenance of the wells are the constant concern of all community members and access to the wells and the work connected with them are basic considerations of any stock management unit. If and when the owner of a well is not around, for instance, a well council or the clan elders (*jarsa gosa*) see to it and supervises the necessary maintenance work.

The traditional wells are all protected by a stonewall, approximately 1.5m high, which prevents surface water flowing into and contaminating the well. To protect the water structures and the immediate environs of the wells against direct exposure to agents of weathering, erosion and degradation, the *dargula* (i.e. the zone immediately outside the well perimeter and the watering troughs, where livestock rest after drinking), and the *itis* (i.e. the outer area where livestock organised into groups wait for their turn before watering) and any shade trees within these environs are recognised by customary law as belonging to the well owner. Outsiders may not enter or use the resources of these areas, without prior permission. It is a serious offence to cut down trees or lop branches in the *dargula*, or to bring animals into the *dargula* or *itis* without a prior permission to do so. In fact, the Gabbra and Borana communities equate the *confi* relationship between the well and the owner to the relationship between a wife and husband. The well is said to be the wife of the *abba eela/confi* (father of the well) and any offence committed with regard to the wells/water structures, the *dargula*, the *itis* or any other resources within these environs is equated to offences committed to someone's legal wife and meted out with similar severe punishments. Thus, cutting down trees or lopping their branches within the recog-

nised area of a well is tantamount to shaving off the hair of someone's wife; and to demolish or smash the watering troughs is the equivalent of cutting off her breasts. To remove the perimeter thorn bush fence of a well is the same as stripping naked in public the wife of its owner, while burying a well is like burying her alive. These and other rules and the corresponding punishments help the Gabbra to manage their limited water resources, to avoid the destruction so often visible around "modern" water points and to preserve biodiversity in a variety of special microenvironments.

Problems and recommendations

Rangelands harbour a wealth of biodiversity, which is economically and culturally essential for the pastoral people. Over the years, the culture of the Gabbra have developed an elaborate system of land use practices that helped to conserve the unique flora in the rangeland and provided for the livelihoods of pastoralist communities.¹¹ Currently, however, a number of constraints and challenges are increasingly apparent in opposition to the Gabbra conservation efforts:

- the cultural practices, including taboos, that helped to conserve biodiversity in the past are being eroded by rapidly changing social and economic circumstances;
- traditional natural resources management institutions are weakening due to conflicts between customary organisations and statutory laws;
- people's range and capacity for mobility are reduced due to the government efforts at sedentaris-

ing communities;

- several "drought reserves" and dry season pastures reserves have been lost to other land uses, including state protected areas;
- the utilisation of range resources is uneven, mostly due to lack of reliable water sources;
- people are perceived, and starting to perceive themselves, as "poor" and, as they are totally dependent on natural resources, are attempting to get themselves out of "poverty" by taking up inappropriate practices, such as agriculture in marginal areas.

The hopes of reversing such a situation are not high, but depend on a reversal of perception and policy regarding mobile pastoralism. Mobile pastoralists need to be recognised as key partners for biodiversity conservation in dry-land ecosystems. Natural resource managers and conservationists should value and build upon the rich indigenous knowledge of mobile indigenous communities such as the Gabbra and support their livelihood system as the only sustainable option in arid, non-equilibrium

Mobile pastoralists need to be recognised as key partners for biodiversity conservation in dry-land ecosystems.



Figure 7. The young Gabbra girls are largely tasked with the responsibility of herding goats and taking them to drinking points (*Courtesy of Chachu F. Ganya*)

ecosystems. Pastoralists need help to regain land lost to competing uses—such as unsustainable agricultural uses in the few pockets of available water resources, without which the whole pastoral livelihood system is jeopardised across the landscape.¹² They also need help to regain/ restore pasture through appropriate water points in their paths and migration routes. And their social organisation, which demonstrated enormous resource management capacities in some of the most difficult environments on earth, can be much better recognised, valued and strengthened. Importantly, traditional management systems should never be replaced by top down institutions and projects, even if designed in support of lofty decentralisation, development and conservation objectives or any other “savior scheme” promoted from outside. We owe a profound respect to the Gabbra and other mobile indigenous people. We should listen to them, and not allow dialogue to be sabotaged through convenient stereotypes.¹³ The Gabbra’s wealth of knowledge, skills and institutions allowed them to conserve much of their biodiversity while the rest of the world, in much easier environments, was busy destroying its own. We should admire their intelligence, care and stamina and, first and foremost, learn from them before coming in with any of our recipes to “improve their lives” and “conserve their biodiversity”.

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Continuidad y discontinuidad culturales en el manejo ambiental de tres diferentes ecosistemas en Colombia

Juan Mayr Maldonado y Guillermo E. Rodríguez-Navarro

Resumen. Colombia, gracias a su localización geográfica en el trópico americano, cuenta con una extraordinaria diversidad cultural y biológica. El presente ensayo analiza tres diferentes regiones, representativas de algunos de los principales ecosistemas de América tropical, así como la *continuidad* cultural en el manejo de los ecosistemas por parte de las familias lingüísticas que los habitan: Macro Chibcha, Karib y Arawak. Estos sistemas lingüísticos están relacionados directamente con elementos culturales. Los grupos Macro Chibchas son por excelencia sedentarios, los Arawak son semi-nómadas y los Karib son guerreros que influenciaron toda la costa Caribe de Colombia, teniendo enorme contacto con grupos ribereños. Cada uno de estos grupos culturales se ha adaptado a diferentes ecosistemas: la Sierra Nevada de Santa Marta—sistema montañoso independiente a la cordillera de los Andes; los valles aluviales de los ríos Cauca, Magdalena, Sinú y bajo San Jorge—la mayor zona de humedales en el país; y la Amazonía colombiana—correspondiente a las cuencas de los ríos que tributan al Amazonas y algunos que lo hacen al alto Orinoco. El conocimiento tradicional y los mecanismos de adaptación a esta variedad de ecosistemas tienen muchos elementos vigentes que imponen el gran reto de ser interpretados e incorporados a las políticas para el adecuado manejo ambiental de estos ecosistemas tropicales de alta complejidad y fragilidad. Los tres casos seleccionados para este ensayo muestran diferentes evoluciones culturales. En algunos casos la transformación cultural evidencia una continuidad cultural asociada a un manejo adecuado de los ecosistemas tropicales de alta fragilidad. En otros casos se han perdido muchas de las tradiciones culturales asociadas al manejo y uso de los ecosistemas, con la consecuente pérdida de interesantes y muy apropiadas formas de manejo ambiental.

La relación existente entre cultura y manejo de los ecosistemas tropicales es algo evidente en un país de enorme biodiversidad como lo es Colombia y extrapolable a la América tropical en su conjunto.

En Colombia encontramos varias familias lingüísticas que dan origen a las diversas etnias: Macro Chibcha, Karib y Arawak. Estos sistemas lingüísticos están relacionados directamente con elementos culturales. Los grupos Macro Chibchas son por excelencia sedentarios, los Arawak, (Tucano, Huitoto y Bora) son semi-nómadas y los Karib guerreros que influenciaron toda la costa Caribe de Colombia, teniendo enorme contacto con grupos ribereños. La diversidad cultural existente, aun hoy en día, se ha mantenido en gran proporción al igual

que su biodiversidad.¹El presente artículo busca explorar tres regiones colombianas habitadas en la actualidad por diferentes grupos étnicos y donde se evidencian singulares vestigios arqueológicos asociados al manejo sostenible de los ecosistemas. Se trata de ecosistemas diferentes de alta biodiversidad: la Sierra Nevada de Santa Marta es una masa montañosa aislada en la costa del Caribe poblada desde tiempos prehispánicos por grupos Macro Chibcha; las planicies inundables del Caribe Colombiano fueron sometidas a diversas incursiones de guerreros Karib; y la Amazonia Colombiana, conformada por la gran cuenca de los ríos que vierten sus aguas al Amazonas, incluye una población indígena constituida por más de cincuenta etnias pertenecientes al grupo lingüístico Arawak.² En estas tres regiones encontramos aun hoy en día permanencias

culturales que ofrecen elementos de gran utilidad para enfrentar los retos actuales y futuros en el manejo adecuado de ecosistemas tropicales de alta fragilidad.³

El primero de estos ecosistemas es la Sierra Nevada de Santa Marta, la montaña litoral más alta en el planeta, rodeada de planicies aluviales en el Caribe Colombiano, y que sirvió de refugio pleistocénico para muchas especies y donde hay evidencia de asentamientos prehispánicos con plataformas líticas interconectadas por una intrincada red de caminos de piedra que evidencian un manejo sostenible de ecosistemas frágiles de montaña de alta pendiente. En la actualidad este sistema montañoso está habitado por miles de campesinos que han migrado de otras regiones del país en búsqueda de oportunidades y por cuatro pueblos indígenas que se consideran custodios del “corazón del mundo” y que hoy en día se debaten en medio del conflicto armado entre paramilitares, guerrilleros y las fuerzas armadas.

Un segundo ecosistema lo constituyen los valles aluviales de los ríos Cauca, Magdalena, Sinú y bajo San Jorge donde se presenta la mayor zona de humedales en el país, mejor conocida como la región de la Mojana. Allí los grupos prehispánicos Zenú modelaron a lo largo de los siglos un complejo sistema de canalizaciones y aterrazamientos a la manera de plataformas que sobresalían en épocas de inundación, sistema este de gran magnitud que aún se evidencia después de más de 500 años de abandono. Estos vestigios ponen de manifiesto la adaptación a tierras inundables donde se aprovechaban al máximo y de manera periódicamente los fértiles sedimentos producto de las inundaciones.⁴ En la actualidad habitan allí pueblos de pescadores y la región se ha visto transformada por la ganadería extensiva en manos de grandes terratenientes.

Finalmente se analiza la Amazonía colombiana que corresponde a las cuencas de los ríos que tributan al Amazonas y algunos que lo hacen al alto Orinoco. Esta región conservó la vegetación selvática durante varios períodos en el pleistoceno y el holoceno cuando, al bajar la temperatura y disminuir la pluviosidad por efectos de episodios glaciales, grandes extensiones de bosques fueron transformados en sabanas. Fue allí, en las áreas con mayor pluviosidad, donde se refugiaron grandes números de especies animales y de flora. El aislamiento prolongado de estos refugios permitió que sus habitantes evolucionaran en formas distintas. Se explica así la amplia variación de grupos culturales en la Amazonía donde no hay barreras geográficas que la justifiquen.⁵ En la actualidad la región se ha visto amenazada por la colonización coquera, la explotación maderera, el oro aluvial y el

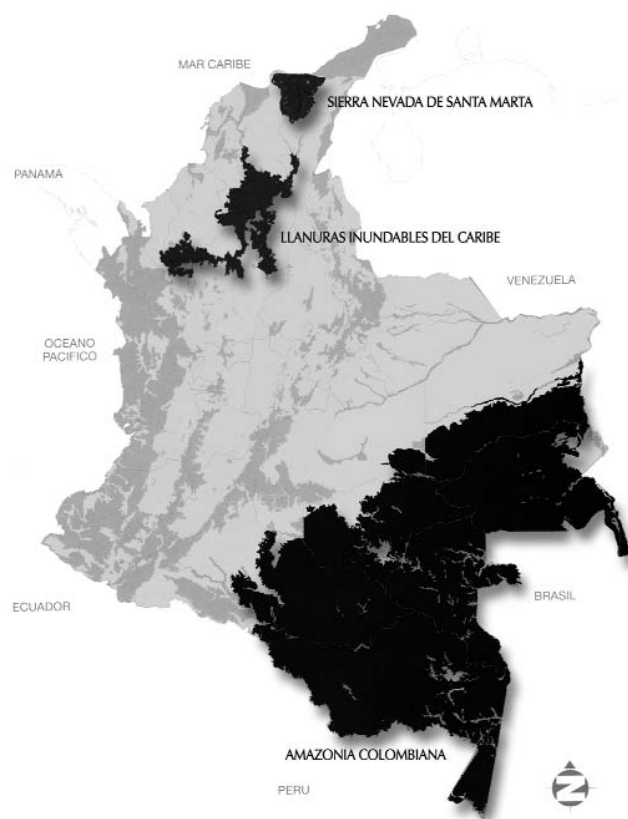


Figura 1. Mapa de Colombia mostrando las tres regiones

conflicto armado, en tanto que las poblaciones indígenas han visto cómo sus territorios van siendo afectados paulatinamente.

Históricamente han sido muchos los factores que han intervenido en los procesos de aculturación de las comunidades indígenas a lo largo de los siglos. Las guerras durante la época de la conquista, los procesos de catequización, así como las intervenciones económicas y grandes explotaciones en los territorios indígenas a partir del modelo occidental impuesto por los europeos han marcado el transcurrir de estos pueblos, y más recientemente lo han hecho el narcotráfico y el conflicto armado. Sin embargo, son varias las poblaciones indígenas que lograron aislarse y sobrevivir para mantener muchas de sus formas y tradiciones culturales a pesar de la persecución y explotación a la que han sido sometidos; la resistencia indígena y la lucha por el respeto a su autonomía hacen todavía a parte de su agenda.

Sin lugar a dudas, los exitosos procesos de adaptación y readaptación a circunstancias adversas son factores que han permitido que aun exista una *continuidad* cultural en diferentes lugares de la América tropical.

En el caso colombiano y particularmente en las tres regiones que trata el presente ensayo, esta *continuidad* cultural se ha visto favorecida por una escasa presencia institucional y la creación de resguardos indígenas y el establecimiento de Parques Naturales Nacionales, varios de los cuales son coincidentes con territorios indígenas. Esta legislación se ha visto reforzada más recientemente por la Constitución política promulgada en 1991, que reconoce la pluriculturalidad como parte fundamental de la nacionalidad colombiana y estipula una serie de preceptos constitucionales relacionadas con el respeto cultural, así como el derecho a un gobierno propio de acuerdo a los usos y costumbres indígenas, dando

de esta manera espacio a la validación del conocimiento tradicional indígena.

Historia del Poblamiento: La Compleja Relación entre Cultura y Manejo Ambiental

Uno de los elementos que facilita comprender los procesos históricos del poblamiento indígena desde épocas precolombinas es la arqueología, puesto que evidencia elementos de la tradición cultural a través del tiempo y el espacio. La arqueología se plantea como un eje de análisis importante que permite establecer elementos claves de relación entre cultura y medio ambiente.

El poblamiento de América data de 14.000 años aproximadamente. Los lugares en los cuales de origina la cerámica en Colombia antecedieron a muchos otros similares en Meso América y los Andes Centrales.

Probablemente estos fueron los focos culturales de los cuales derivaron las culturas que florecieron en el país. En el Caribe Colombiano, 5.000 a.C. en San Jacinto, Boyacá, aparece una de las cerámicas más tempranas de América. Fue un período de difusión de técnicas y florecimiento de culturas que se adaptaron a diferentes ecosistemas

logrando un alto grado de desarrollo.⁶ La influencia Chibcha y Mesoamericana en los vestigios arqueológicos en el Caribe Colombiano, indican que en cierto período de la época prehispánica, pueblos portadores de una cultura homogénea se desplazaron a lo largo de esta región de América, utilizando especialmente los ríos Atrato, San Juan, Sinú, San Jorge y Cauca siguiendo una dirección norte-sur, hasta alcanzar las comarcas andinas centrales. Desde el

...la continuidad cultural se ha visto favorecida por una escasa presencia institucional y la creación de resguardos indígenas y el establecimiento de Parques Naturales Nacionales, varios de los cuales son coincidentes con territorios indígenas

oriente, se dieron migraciones de pueblos de origen Arawak y Karib, quienes debieron seguir rutas naturales y de fácil penetración como los ríos Magdalena y Orinoco.

En el siglo XVI, cuando llegaron los españoles, la influencia Karib alcanzaba hasta los umbrales de la sábana de Bogotá, siguiendo principalmente el curso del río Magdalena. La participación de un estrato Arawak en el contexto cultural de los pueblos prehispánicos, está atestiguada por la presencia de algunos núcleos pertenecientes a este grupo lingüístico en la península de la Guajira sobre el mar Caribe. Entre estos grupos lingüístico-culturales se dio una intensa interacción al habitar el territorio de la costa norte. Existen notables similitudes entre los pueblos de origen Chibcha y los Arawaks, especialmente en sus códigos éticos y sociales que rigen una y otra sociedad y en la existencia de una elite sacerdotal. Fueron frecuentes los mestizajes entre estos últimos y los Karib, no obstante haber sido enemigos irreconciliables entre sí. Las alianzas se hicieron después que los prisioneros Caribes eran sometidos a un proceso de aculturación.⁷

Entre 7.000 y 2.300 años a. C., el hombre americano avanza notablemente en el conocimiento de su medio ambiente, lo que favoreció el apareamiento de la agricultura, del cual son testigos los desarrollos del cultivo del maíz y la yuca, de gran importancia en el proceso de sedentarización. La agricultura se constituyó en punto de partida en el desarrollo de las culturas precolombinas, que transformaron diversos espacios geográficos.⁸ El manejo del medio ambiente en las sociedades prehispánicas estuvo impregnado por una actitud cosmológica ante la naturaleza. Las labores de caza, pesca, recolección y agricultura correspondían a procesos naturales de relación del hombre con los animales, peces y plantas. La riqueza de los diversos ecosistemas y las diferentes formas de

adaptación que garantizaron la subsistencia, y tal vez las muy buenas condiciones de vida, para los grupos humanos, modelaron el proceso de sedentarización, el desarrollo de diferentes tipos de cultivos, el manejo de los recursos, los estilos de habitación, los instrumentos (en particular los cerámicos) y los sistemas simbólicos y rituales. La gran variedad de biomas: montañas, altiplanos, valles interandinos, faldas o vertientes, sabanas, llanuras y litorales, hizo que en el pasado esos paisajes modelaran culturas diferenciadas que generaron



Figura 2. Mujer indígena Kogi tejiendo mochila o bolsa tradicional (Cortesía a Juan Mayr Maldonado)

una amplia gama de respuestas adaptativas a ecosistemas de alta fragilidad.⁹

A la llegada de los conquistadores en el siglo XVI, la región de la Costa Caribe se encontraba habitada por diversos grupos indígenas, entre los cuales se destacan los Tairona y Zenú, quienes alcanzaron los

El manejo del medio ambiente en las sociedades prehispánicas estuvo impregnado por una actitud cosmológica ante la naturaleza.

más altos grados de desarrollo y sedentarismo en la Colombia prehispánica. Tanto los Tairona como los Zenú, de marcada influencia mesoamericana, habían iniciado una explotación de los recursos naturales de manera sistemática,

manteniendo el equilibrio de los ecosistemas intervenidos, cuya evidencia permanece hoy día. Por un lado los Tairona desarrollaron sofisticados sistemas de manejo ambiental para la explotación de los recursos en zonas de grandes pendientes, de manera tal que se garantizara su subsistencia y la consolidación de sus formas culturales y dominio territorial. La producción de excedentes económicos permitió el surgimiento de especialistas, de una compleja jerarquía socio-política y de asentamientos con características urbanas, que en el caso Tairona llegaron en algunos casos a agrupar más de 5.000 habitantes, como lo evidencian los conglomerados de terrazas líticas o ciudades de piedra cuyos vestigios se mantienen actualmente.¹⁰ Por otro lado los Zenú, especialmente concentrados en el río Sinú y Bajo San Jorge manejaron los ciclos hidrológicos de acuerdo a las épocas de lluvia y sequía en zonas de inundación mediante un sistema de canales artificiales. Una numerosa población se estableció a lo largo de los ríos, en viviendas aisladas o en aldeas, construidas sobre grandes plataformas artificiales. A esta época corresponden los canales de control de aguas que cubren cerca de 5.000 kilómetros cuadrados de terrenos inundables, las plataformas de vivienda y los montículos funerarios en donde se encuentran objetos de oro y cerámica de la tradición modelada-pintada.¹¹ La ocupación de la Amazonía tiene también una considerable antigüedad y aparentemente existieron allí poblaciones más densas y estables de lo que hasta hace pocos años se pensaba según lo atestiguan muchas de

las evidencias arqueológicas encontradas, cualitativamente diferentes a las poblaciones indígenas actuales. Se sabe muy poco sobre las formas de adaptación, subsistencia y organización sociopolítica prevalentes en diversas épocas y áreas, que trasciendan la sucesión de estilos cerámicos como en el caso Tikuna donde se observa una lenta pero estable evolución estilística en las evidencias arqueológicas a lo largo de los siglos, mostrando la *continuidad* que aun se mantiene en elementos tan cotidianos como la cerámica.¹²

La Sierra Nevada de Santa Marta

La Sierra Nevada de Santa Marta, la montaña litoral más alta del mundo, se eleva abruptamente desde las costas del mar Caribe y en tan sólo 42 kilómetros alcanza una altura de 5.775 metros en sus picos nevados. Cuenta con un territorio de 17.000 km² de donde nacen 35 cuencas hidrográficas que abastecen a una población cercana a los dos millones de habitantes y donde se presentan todas las zonas climáticas de la región tropical de América. Su importancia biológica global fue reconocida por la UNESCO al declararla Reserva de la Biosfera.

En tiempos prehispánicos habitaron la Sierra los indígenas Taironas, quienes aprovecharon los diferentes pisos térmicos mediante un sistema sostenible de uso de los recursos. Grupo consolidado desde los primeros siglos de nuestra era, alcanzó su máximo esplendor después del año 1000 d.C. Densas poblaciones se conglomeraron en numerosos núcleos urbanos en los cuales construyeron terrazas, canales, caminos, escaleras y cimientos de viviendas. Investigaciones arqueológicas en Ciudad Perdida, uno de los poblados Taironas, han permitido entender cómo las ciudades Taironas se adaptaron a las condiciones del medio ambiente sin romper con el equilibrio ecológico.¹³

Hoy, en la parte alta de las montañas viven 4 grupos indígenas: Kogi, Arhuacos, Wiwa y Kankuamos, quienes mantienen en gran medida sus tradiciones precolombinas. Su población total, distribuida en tres resguardos, se estima en 60.000 personas. Igualmente, unos 250.000 campesinos provenientes de diversas regiones del país viven en las faldas media y baja de las montañas, y quienes han traído consigo las prácticas culturales de sus lugares de origen, conformando un amplio mosaico cultural. Hasta hoy, es la "Ley de la Madre" o "Ley Antigua" la que rige el comportamiento general de los indígenas, y son los Mamos (sacerdotes o chamanes) quienes hacen respetar este complejo código de leyes por medio de sus consejos, ofrendas (pagamentos) y ceremonias, para garantizar el normal funcionamiento de los ciclos vitales de los hombres, animales y plantas. La Sierra Nevada de Santa Marta se percibe como un cuerpo vivo donde cada uno de los elementos de la naturaleza es parte vital de la cultura indígena fundamentada en una relación armónica con el medio.¹⁴ Sus formas de producción desarrollan sistemas de agricultura de pancoger (cultivos de subsistencia) tradicionalmente basados en ciclos de migraciones altitudinales, utilizando los diversos pisos térmicos lo que garantiza una producción diversificada y el descanso de los suelos de manera periódica. Debido a las presiones externas sobre los territorios indígenas, se han introducido actividades no tradicionales que atentan contra la conservación de los recursos naturales como la ganadería en los páramos. La autoridad de los sacerdotes Kogi se basa en un conocimiento detallado de los fenómenos ecológicos y en decisiones apropiadas en el contexto de un ecosistema agrícola controlado por rituales locales de los ciclos de vida. Los sacerdotes Kogi tienen dos objetivos: mantener la densidad de la población por debajo de la capacidad de carga del territorio, y conservar zonas ecológicas sin

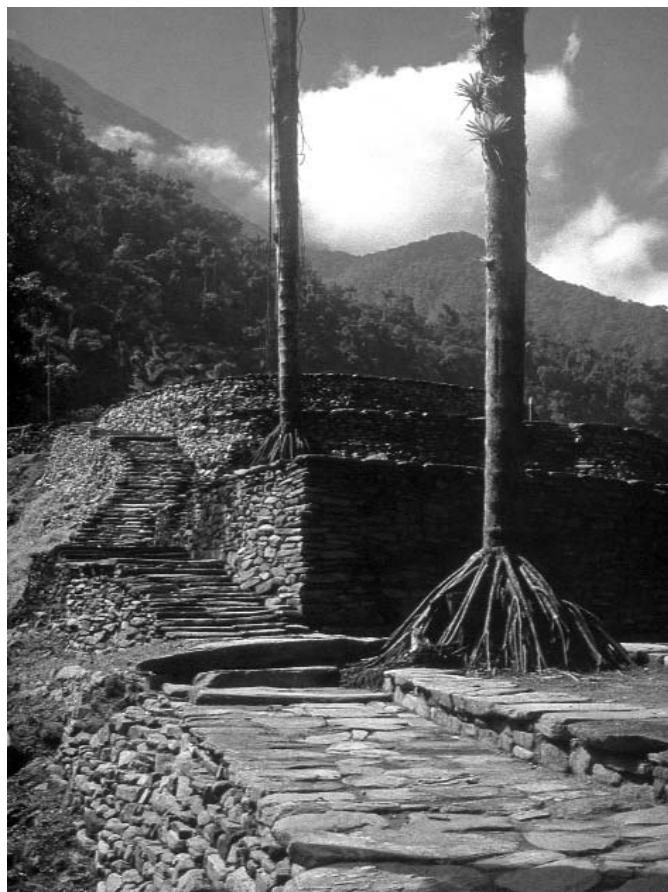


Figura 3. Terrazas y caminos arqueológicos Tairona en el alto río Buritaca (Cortesía a Juan Mayr Maldonado)

intervenir que puedan constituir reservas en tiempos de necesidad.

La historia de la colonización en la zona, en especial aquella que fue impulsada por la violencia bipartidista a mediados del siglo pasado, trajo consigo el deterioro ambiental ante la tala indiscriminada practicada por los nuevos pobladores para establecer sus parcelas, y produjo el desplazamiento de las comunidades indígenas hacia las tierras altas, frías y menos productivas. En las últimas tres décadas este proceso se logró estabilizar y en algunos casos se ha revertido con el logro de la constitución y ampliación de los resguardos y los esfuerzos realizados por ONGs, la comunidad internacional y las organizaciones indígenas, así como una mayor intervención estatal. Sin embargo, más recién

temente las presiones sobre el territorio tradicional han aumentado, en particular por el conflicto armado que se vive en la región por el control territorial de una de las regiones estratégicas, desde el punto de vista político, militar y económico, entre grupos paramilitares, las guerrillas y el ejército nacional. El conflicto ha llevado al asesinato de líderes indígenas y campesinos, al desplazamiento de los pobladores de la región y al rompimiento de los ciclos rituales de los indígenas hasta poner en riesgo su seguridad alimentaria. De otro lado, la agro-industrialización de gran escala de la región, hoy con gran presión para la aceptación de cultivos transgénicos, en especial de las zonas planas alrededor del macizo montañoso y la incorporación a proyectos tecnológicos y de mercadotecnia mundiales, ponen en peligro los sistemas culturales tradicionales.¹⁵ La amenaza que viven en la actualidad los pueblos indígenas y sus prácticas culturales en asocio al uso indebido e insostenible de los recursos naturales realizado históricamente y las nuevas ocupaciones armadas del territorio, ponen en peligro el futuro de más de dos millones de habitantes, así como la irrigación de grandes zonas agropecuarias ubicadas alrededor del macizo que dependen en la región del recurso hídrico que nace en la Sierra Nevada.

Las Llanuras Inundables del Caribe.

Hacia el continente, la Llanura del Caribe esta delimitada por las estribaciones de las cordilleras Occidental y Central. En el frente de humedad definido por estas cordilleras en la parte sur de los actuales departamentos de Córdoba, Sucre, Bolívar y Cesar, se desarrolla una franja de selva húmeda tropical. Debido a su topografía, el paisaje está dominado por la presencia de ciénagas interconectadas por medio de caños y con zonas cuya inundación es fluctuante. Como ecosistema, presenta una gran dinámica hidrológica, asociada a las fluctuaciones del clima y su ubicación intermedia

entre las estribaciones montañosas del Norte de la región Andina y la Llanura de la región Caribe.¹⁶ Las Llanuras tropicales del Caribe en el norte colombiano son zonas de ciénagas, estuarios y sabanas, con una fauna variada. Estos humedales son funda-



Figura 4. Paisaje húmedo del bajo Sinú. (Cortesía a Andrés Mayr)

mentales en la amortiguación de inundaciones, al permitir la distribución de cabezas de agua originadas por las lluvias en las partes altas de los ríos y el desplante de las aguas, facilitando la decantación y acumulación de sedimentos.¹⁷

Los Zenúes se expandieron desde ocho siglos antes de la era cristiana por las cuencas de los ríos Sinú, San Jorge, Cauca y Nechí. Al momento de su auge, su territorio estaba dividido en provincias con funciones económicas complementarias: producción de tubérculos alimenticios, de variadas manufacturas y explotación del oro. Se debe destacar entre los Zenúes el uso del adobe, elemento que ningún otro grupo precolombino tuvo en Colombia. Sobresalieron por su asombroso manejo hidráulico, conduciendo los excedentes de agua a sus salidas naturales, y utilizando la sedimentación que proporcionaba abundante alimentación natural, riego y fertilización de áreas de cultivo. En las zonas inundables del Bajo San Jorge los indígenas manejaron las aguas mediante un sis-

tema de canales artificiales que cubre cerca de 500.000 hectáreas. Una numerosa población se estableció a lo largo de los ríos, en viviendas aisladas o en aldeas, construidas sobre plataformas artificiales.

La agricultura Zenú alcanzó niveles de desarrollo muy altos, hasta el punto de usar en forma habitual sistemas de riego que suponían la existencia de fuerza laboral organizada por autoridades suprafamiliares. A la llegada de los españoles formaban todavía una cultura viva y densa, que no soportó el contacto con los invasores europeos.¹⁸ La región quedó abandonada por varios siglos y en ella lograron subsistir aldeas de pescadores que mantuvieron muchos de los elementos culturales del pasado. La ausencia estatal en el siglo XX y en particular aquella de los años cuarenta y cincuenta generaron el gamonalismo, con un extenso control sobre la región para el mantenimiento de los grandes hatos ganaderos. Así en épocas de lluvia el ganado pasta en las tierras altas y cuando las aguas bajan es trasladado a las tierras bajas y más fértiles. En este proceso son muchas las ciénagas y humedales que han sido desecados. Todo esto ha estado acompañado por la politiquería, la violencia política y el ingreso de las guerrillas y el narcotráfico en las décadas de los sesenta, ochenta y noventa. En efecto, la guerrilla terminó reemplazando al estado colombiano, que abandonó la región "a su suerte". Hoy, como en muchas otras regiones naturales de Colombia, la región se debate en medio del conflicto armado entre paramilitares, guerrillas y fuerza pública por el control territorial. Adicionalmente la región cuenta con un vecindario donde se practica la minería del oro tanto a nivel industrial como artesanal, formal e informal, situación esta que ha generado una contaminación de mercurio sin precedentes sobre los cuerpos de agua.

En medio de este panorama tan desafortu-

nado, solo existe un pequeño y casi simbólico resguardo donde se tiene una clara *continuidad* en actividades textiles, artesanales y de orfebrería. De manera general, puede afirmarse que en la zona la base natural presente ha llegado al límite de sus posibilidades de sostenibilidad: la degradación es evidente y está afectando la totalidad de los procesos socioeconómicos. La deforestación con fines agropecuarios, la alteración inducida de la dinámica hidráulica por medio de tapones y canales, la aplicación de metodologías de explotación inapropiadas, ha generado un cambio generalizado en las condiciones originales hacia terrenos abiertos para uso en ganadería, agricultura, asentamientos e infraestructura. Esto ha ocasionado que en la actualidad existan algunas especies en riesgo de extinción, un marcado deterioro del hábitat y una disminución crítica de la capacidad productiva. Además, las poblaciones que habitan los valles inundables están sometidas a inundaciones y desastres resultantes de las crecientes de los ríos, situaciones que generan la pérdida de las cosechas y hasta las viviendas con todos sus enseres, con el consiguiente incremento de la pobreza para los habitantes de la región.

La Amazonía colombiana

La amazonia colombiana se caracteriza por ser una región cubierta en su gran mayoría por selvas con extensos y caudalosos ríos que tributan sus aguas al río Amazonas. Su territorio presenta numerosas lagunas y zonas pantanosas. Esta extensa llanura tiene varios relieves de poca altura y un clima de selva tropical súper húmedo, con lluvias abundantes. Su base natural está conformada por numerosos ecosistemas distintos que interactúan entre sí, que presentan una gran diversidad de flora y fauna y un alto grado de endemismo. Otra dimensión no menos importante es la oferta hídrica de la Cuenca Amazónica, una de las mayores fuentes de agua dulce del pla-

nete y reguladora del clima mundial. Los numerosos ríos constituyen una de las mayores riquezas de la región: la existencia de una estación seca y otra de lluvias, produce un gran descenso de las aguas de los ríos y, a continuación, un gran ascenso. Esta dinámica del sistema hídrico genera complejas cadenas alimenticias que dan sustento a una fauna increíblemente variada en especies. Considerados en general, los suelos de la Amazonía son pobres,



Figura 5. La comunicación en la Amazonia Colombiana es fluvial. (Cortesía de Andrés Mayr)

tanto en materia orgánica como en minerales. Aún los del pie de monte y las vegas inundables son inferiores a los fértiles suelos andinos. Los nutrientes para la frondosa vegetación no se encuentran en el delgado suelo sino en la capa de hojarasca y detritus que lo cubre, de donde las plantas los obtienen directamente a través de sus raíces y micorrizas.

Debido al clima húmedo en el Amazonas, la recuperación de vestigios arqueológicos es una tarea muy difícil. Aquello que duraría normalmente siglos y hasta milenios en otras áreas más secas, se desintegra rápidamente en el Amazonas. Debido a este hecho, los resultados de la cerámica y las herramientas de piedra se han convertido en los precursores en la historia del Amazonas, así como numerosos petroglifos tallados y pintados sobre las rocas que

afloran en los lechos de los ríos. Según Reichel-Dolmatoff (1976) los nativos intentaban controlar la acumulación de energía en sectores específicos de su cosmos, al interior del cual se encontraba aquello que hoy llamamos "ecosistema". En consecuencia, la regulación ritual de los flujos de energía permitió que se desarrollaran actitudes respetuosas hacia los diferentes componentes del ecosistema, perpetuando un balance ancestral entre el ámbito y las comunidades humanas. Otros autores habían reportado sistemas conceptuales semejantes a los que describiera Reichel-Dolmatoff para la Amazonia colombiana. Estos, también eran el resultado del pensamiento chamánico.¹⁹ El chamanismo es un sistema coherente de creencias y prácticas religiosas, que tratan de organizar y explicar las interrelaciones entre el cosmos, la naturaleza y el hombre. Estas explicaciones sobre el lugar que el hombre ocupa en la naturaleza en parte se fundamentan en experiencias visionarias que, por tener una común base neurofisiológica, son muy convincentes.

Históricamente la cuenca amazónica fue percibida, hasta hace unos pocos años, como un territorio sin historia, o como un gran infierno verde que debía ser colonizado y ocupado por la civilización. El mito de un territorio vacío se expresó en diversas formas. Un Ministro de Agricultura de Colombia proclamaba, en la década del 50, que la Amazonía "era una tierra sin hombres, para los hombres que necesitan tierra". Esta perspectiva justificó diversas políticas desarrollistas que percibían el progreso de la región en términos la destrucción de sus bosques para transformarlos en pastos, la integración de las culturas nativas y el estímulo a todas las formas de ocupación foránea. Sin embargo han sido numerosas las intervenciones que se han dado sobre la Amazonía y sus pobladores -valga la pena recordar la época de la Casa Arana y las explotaciones caucheras que

redujeron a numerosas poblaciones indígenas a la esclavitud; la época del tráfico de pieles que incentivó la cacería a lo largo y ancho del territorio; las misiones religiosas y más recientemente los cultivos ilícitos que han transformado y degradado vastos territorios de la Amazonía, con sus secuelas de transformación cultural y violencia, donde los grupos armados compiten por el

Con la Constitución Política de 1991, los pueblos indígenas encontraron un nuevo espacio para defender sus derechos colectivos y culturales, así como para hacer valer su autonomía.

territorio y el negocio de la coca, a la vez que el gobierno nacional responde de manera militar y mediante las fumigaciones con herbicidas para la erradicación de los narcocultivos. En todos los casos, el comercio, del cual no han escapado los indígenas, ha producido un

interminable ciclo de la deuda y la condena de los habitantes a una vida de dependencia. Todas estas situaciones han tenido profundas repercusiones sobre los numerosos pueblos indígenas que habitan la región.

En total existen 121 resguardos indígenas establecidos en la Amazonía colombiana, que cubren más de la mitad de la región amazónica y que comprenden las áreas de mayor diversidad. En algunas zonas los resguardos se superponen con las áreas de Parques Nacionales, mientras que los restantes constituyen parte de la Reserva Forestal Amazónica. Cien mil habitantes aproximadamente, pertenecientes a 59 etnias, forman la actual población indígena de la Amazonía colombiana.

La adopción de modelos culturales occidentales por parte de la población indígena de la Amazonia ha significado la desaparición de algunas de las estrategias mediante las cuales sus antepasados lograron subsistir durante milenios en la región. Los actuales procesos de adaptación parecen

estar transgrediendo los límites de la oferta ambiental y atentando no solamente contra la seguridad alimentaria de los grupos humanos, sino también contra la existencia misma de las diversas etnias. Con la Constitución Política de 1991, los pueblos indígenas encontraron un nuevo espacio para defender sus derechos colectivos y culturales, así como para hacer valer su autonomía. Muestra de esto es el fortalecimiento de sus organizaciones y gobierno propio, que ha venido asumiendo el manejo directo de los recursos que transfiere la Nación a las diferentes regiones para salud y educación, al igual que la recuperación de los sistemas tradicionales de educación como mecanismo de defensa cultural indígena.

Reflexión a Manera de Conclusiones

En todos los casos discutidos, encontramos evidencia arqueológica de desarrollos culturales adaptados a ecosistemas muy diferentes, donde aun hoy en día hay permanencias culturales asociadas a regiones de alta biodiversidad donde el conocimiento tradicional y las evidencias arqueológicas nos pueden dar valiosos elementos para el manejo de estos frágiles ecosistemas.²⁰

Muchos elementos culturales producidos antes y después de la Conquista se encuentran diseminados hoy en día en forma de vestigios y objetos materiales, y en la continuidad de prácticas sociales y rituales, en los pueblos, en las veredas y en los centros urbanos. El manejo ancestral de los territorios hoy se ve afectado enormemente por las formas de ordenamiento territorial y de tenencia de la tierra que impide a los actuales grupos mantener cierta movilidad que exige a veces el complejo manejo de los ecosistemas como es muy evidente en la Amazonía, a medida de que "el hombre blanco" va apropiándose

La continuidad cultural se expresa en la reproducción de las prácticas económicas, sociales, políticas y simbólicas.

del territorio.

El conocimiento acerca de los procesos de cambio ocurridos en las sociedades indígenas a raíz de la conquista española es principalmente de índole numérica, pero tal vez muy poco se ha tratado el aspecto cultural. Sin embargo, estos procesos culturales ofrecen fuentes riquísimas de información comparados con la documentación relacionada con los cambios anteriores. Una sociedad tan importante y tan cercana a nosotros como la indígena nos ha legado innumerables costumbres en todos los campos: la artesanía, las prácticas agrícolas, las formas de tenencia de la tierra, las normas sociales en la escogencia de la pareja, el curanderismo, la medicina tradicional, las prácticas alimenticias, la vivienda rural, el vestido tradicional, el folclore, la justicia, la resolución pacífica de los conflictos y la cosmovisión ecológica. La *continuidad* cultural se expresa de muchas maneras: "Estas permanencias culturales se reproducen todos los días, consciente o inconscientemente, en las prácticas económicas, sociales, políticas y simbólicas. La riqueza y diversidad cultural de tales manifestaciones es compleja, y comprende el

trabajo del barro, los textiles y la cestería; la realización anual de romerías y fiestas agro-religiosas que responden a creencias de renovación de ciclos de producción; la práctica de conocimientos médicos de curación y enfermedad en que opera la magia y la brujería; conocimientos naturales y cosmovisiones antropomorfizadas; y relaciones sociales, creencias y costumbres que estructuran el ciclo vital de los individuos, el cortejo sexual, la utilización del medio ecológico, y las relaciones interfamiliares entre otras."²¹

Cada sociedad en una época determinada y en el marco de un sistema económico específico, produce un cierto tipo de ordenamiento del espacio, que aun esta vigente en estas regiones y es aun rescatable si se valida y valora el conocimiento ancestral de los antiguos pobladores y se toma su experiencia y practicas como elemento fundamental en el desarrollo de prácticas y propuestas de manejo ambiental hoy día, como se puede ver en las áreas seleccionadas para este ensayo. En aquellos ecosistemas donde se ha mantenido la cultura hay importantes lecciones y opciones para la sostenibilidad, como es el caso de la

Sierra Nevada de Santa Marta. Muchos indígenas del norte de Colombia se han adaptado con éxito a un medio ambiente de laderas en el que se explotan diversos nichos ecológicos. Si se observa la tradición cultural de los indios Kogi de la Sierra Nevada de Santa Marta, se descubre una historia de adaptación ecológica que va desde el cultivo intensivo de maíz en las tierras bajas a cosechas de caña de azúcar y café en las zonas templadas para producir dinero en efectivo que les facilite la compra de productos como el algodón; los sacerdotes-shamanes juegan un papel



Figura 6. Danzas ceremoniales en la fiesta de Santa Rosa, el la Sierra Nevada de Santa Marta. (Cortesía a Ricardo Rey)

importante en el diseño de una serie de mecanismos culturales locales de control

En aquellos ecosistemas donde se ha mantenido la cultura hay importantes lecciones y opciones para la sostenibilidad, como es el caso de la Sierra Nevada de Santa Marta. ... Allí donde se han cambiado las tradiciones y no se han mantenido las prácticas culturales se han generado situaciones ambientales desastrosas, como es el caso Zenú.

de esas prácticas. Las familias individuales explotan una amplia gama de micro-medio-ambientes, al mismo tiempo que son agudamente conscientes en cuanto a la necesidad de preservar los recursos de la tierra, el agua y la vegetación, así como la diversidad genética autóctona.²²

Allí donde se han cambiado las tradiciones y no se han mantenido las prácticas culturales se han generado situaciones ambientales desastrosas como es el caso Zenú, donde se han presentado modificaciones sustantivas al arraigo cultural pero aun se mantienen las tradiciones y además se observa un movimiento renacentista desde lo cultural.

En el área Zenú la dinámica hidráulica natural se ha vuelto adversa y el agotamiento de la oferta ambiental está resultando en un balance negativo en el cual los recursos invertidos (tiempo, insumos, esfuerzo) no compensan los beneficios obtenidos, por lo tanto la rentabilidad local no es adecuada, llevando a un empobrecimiento generalizado. Sin embargo aun se mantienen los canales prehispánicos que fueron diseñados precisamente para el control de estas zonas inundables— extensas obras de ingeniería a que aun sobreviven y que pueden ser la respuesta más actual y adecuada al manejo de estas frágiles pero fértiles tierras.

La comprensión de la dinámica de los bosques tropicales, es, sin duda, uno de los aspectos fundamentales para entender la ocupación de la Amazonía. Los suelos a lo

largo del río Amazonas o de ríos que provienen de los Andes, son fertilizados periódicamente, mientras la tierra firme carece de fertilización natural y sus ecosistemas dependen básicamente del reciclaje de los nutrientes disponibles en el suelo o los que se captan a través de la lluvia.

Hoy en día el reconocimiento a los conocimientos tradicionales indígenas y el apoyo al fortalecimiento de los gobiernos y autoridades indígenas (Constitución Política de 1991) empiezan a constituirse en uno de los principales caminos para el manejo territorial y la conservación y uso sostenible de los ecosistemas y la autonomía cultural.

En el caso de la Sierra Nevada esto es obvio y en el Amazonas se empiezan a ver también una serie de avances mediante el fortalecimiento de las autoridades indígenas en sus resguardos, la transferencia de la educación a manos indígenas y el fomento a la investigación indígena a cargo de ellos mismos en coordinación con sus autoridades tradicionales.

Los sistemas agrícolas tradicionales aún utilizados entre los actuales indígenas deben ser registrados, adaptados y fortalecidos combinando así los principios sólidos y de sostenibilidad desde un punto de vista ecológico de los sistemas agrícolas tradicionales con ciertas técnicas específicas de agricultura comercial, y así lograr nuestro objetivo de crear nuevos sistemas de producción, que permitan a la vez mejorar las condiciones de vida de los colonos y preservar los recursos forestales renovables. El debate se centra en los procesos de desarrollo que se vienen dando y afectando los ecosiste-

en el Amazonas se empiezan a ver también una serie de avances mediante el fortalecimiento de las autoridades indígenas en sus resguardos, la transferencia de la educación a manos indígenas y el fomento a la investigación indígena a cargo de ellos mismos en coordinación con sus autoridades tradicionales

mas de la Sierra Nevada y las propuestas indígenas y evidencias recientes del adecuado manejo indígena como una alternativa para garantizar la sostenibilidad regional.²³

Investigaciones en sistemas de producción intensiva con bajo impacto ambiental, tal como son huertas, terrazas en laderas y erosiones sobre los fillos, han encontrado que la mayor parte de la información existente proviene de investigaciones en arqueología económica de civilizaciones del trópico americano. Biólogos, agrónomos y arqueólogos, intrigados en saber cómo los antiguos sostenían vastas poblaciones sobre áreas que hoy son devastadas por las prácticas agrícolas de mundo moderno, han sido quienes han brindado los mayores aportes en esta área. De otro lado, el conflicto armado y los cultivos ilícitos atentan de manera severa contra los territorios indígenas, sus prácticas culturales, su autonomía y sus derechos humanos y culturales. La resolución de estos problemas permitirá a mejores oportunidades a la *continuidad* cultural y la armonía social que Colombia tan necesita.

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History, culture and participatory marine conservation in a Brazilian fishing community

Patrícia Pinto da Silva

Summary. Brazilian coastal communities are faced with increasing pressures on the living marine resources on which they depend. Policies related to property rights of the marine environment, specifically the creation of direct use collaboratively managed marine protected areas, may provide the mechanism for supporting and sustaining traditional coastal livelihoods. Maritime Extractive Reserves, a new type of government-community collaborative management regime, are being established in coastal areas of Brazil in order to protect natural resources while sustaining local livelihoods. These reserves may enable fishing-dependent communities to maintain or even strengthen the traditional institutions that have governed these resources over time. This paper explores the role that history and culture in Arraial do Cabo (Rio de Janeiro) play in determining this community's ability to collaboratively manage local marine resources.

Small-scale fishing communities around the world are at serious risk from depleting fish stocks, coastal pollution and other threats to the marine environment. There are an estimated 200 million people whose livelihoods depend on fishing¹ many of whom live at the margins. U.N. Food and Agriculture Organisation figures show that the number of people fishing and fish farming worldwide has more than doubled since 1970.² The poorest two-thirds of the world's population obtain approximately forty percent of their protein from fish.³ Fishing is not only a source of nutrition but it is also an important source of employment. Significantly, artisanal or small-scale fisheries employ twenty times as many people as the industrial fisheries that are rapidly replacing them.

Brazil has over 4,500 miles of coastline encompassing a multitude of marine environments. This ecological diversity, coupled with the country's cultural diversity, has encouraged the proliferation of fishing methods as distinct from one another as the environment that sustains them. Fishing practices are often an amalgamation of

indigenous strategies and European ones. These methods include the use of small, hand-made crafts (such as rafts or dugout canoes) and simple technology. Traditional fishers often have intimate knowledge of their surroundings and seasonal changes with belief systems adapted to the conservation of special areas. Frequently, traditional coastal communities depend on forest resources to enable them to take advantage of those of the sea. Their simple boats, rods, masts, even nets are made from local terrestrial resources. Although their methods are low tech in comparison industrial fishing, artisanal fishers bring in as much as 70% of the total catch in Brazil.⁴

The strategies of small-scale fishers are often congruent with conservation goals. It is not uncommon that over time, local management regimes have developed that establish when, by whom and where both sea and terrestrial resources can be used. Many of these groups have developed locally appropriate resource management systems influenced by the characteristics of their natural resource base and their cultural context.⁵ Supporting these types of regimes may be relevant not only for strengthening local livelihoods but also for

conserving marine resources.

Brazilian coastal communities are being faced with increasing pressures on the living marine resources upon which their livelihoods depend. Policy changes on property rights of certain marine areas may create an enabling environment for fishing communities to adapt to these pressures while maintaining or even strengthening the traditional institutions that have governed these resources over time. This paper explores the history and culture of one such community, Arraial do Cabo (Rio de Janeiro), and the likelihood for successful long-term collective marine conservation. Research in this municipality, the location of the first open-water direct use marine protected area, suggests that history and culture may be the defining factors in determining the success of long-term resource conservation initiatives.

Local marine resources

Terrestrial and aquatic ecosystems in Arraial do Cabo are deeply intertwined. Land formations are in part a result of distant ocean currents and the movements of sediments just as the migration of fish has been

encouraged by favorable conditions for feeding related to the quiet bays surrounding the cape. The uses of these resources have always complemented each other. Fishers and their families have used materials from the forest and dunes for making nets, while salt mined from nearby lagoons served to preserve fish before the arrival of industrial freezers.

The hills that today surround the dense urban center of Arraial do Cabo once formed an archipelago of volcanic islands. Over time, winds and strong ocean currents deposited sand along the coast creating sandbanks. These sandbanks eventually linked the former islands together connecting them to the mainland and forming a cape extending into the Atlantic Ocean. This cape is surrounded by distinctive coastal formations ranging from protected coves and harbors to rough and rocky open ocean terrain. This process also created favorable conditions for a variety of different ecosystems to emerge all of which have at some point or another been utilised in supporting local livelihoods. Local ecosystems include sand dunes, *restingas*⁶, salt lakes, coral reefs, lagoons, mangrove forests and patches of the acutely threatened Atlantic Rainforest.⁷

The richness of the aquatic ecosystem surrounding the cape is due largely to the *upwelling* phenomenon. Waters at depths of 120 meters or more receive little sunlight essential for the primary production of phytoplankton. The absence of these small creatures results in a high nutrient concentration at these depths. In a few coastal areas around the world, due to oceanographic,



Figure 1. Canoe on Praia Grande (Courtesy Patricia Pinto da Silva)

geographic and meteorological factors, deep oceanic waters *up-well*, bringing with them nitrates and phosphates that act as fertilizers for the more superficial coastal waters. The availability of these nutrients thereby attracts a high diversity of aquatic plants and animals and increases the richness of the ecosystem. The result is an extremely diverse aquatic system which has sustained the livelihoods of the inhabitants of the cape over thousands of years. The principal commercialised species are: mullet (*Mugill spp.*), bonito (*Auxis sp.*), blue fish (*Pomatomus saltatrix*), squid (*Loligo sanpaulensis*) and a species of dogfish (*Squalus acanthias*).

Marine Extractive Reserve's (MER)

As a result of both internal and international pressure, the Brazilian Government has expanded its protected area network over the last ten years. Although the Extractive Reserve conservation category was created in 1990, it was only in 1997 that this concept was applied to open water marine areas. Currently there are plans to create direct use marine conservation areas along the coastline in order to protect the cultural and ecological diversity of coastal areas. A

This policy trend is significant... it represents the first government-sponsored effort to protect the common property resources upon which small-scale fishers depend.

list made available by National Center for the Sustainable Development of Traditional Populations (CNPT) indicates an increasing trend towards the establishment of direct use marine reserves. Of 22 reserves currently being created, 18 focus on aquatic resources with the majority (13) encompassing

open water marine environments in coastal areas (See Fig. 2). This policy trend is significant in that it represents the first government-sponsored effort to protect the common property resources upon which small-scale fishers depend.

In order to create an MER, interested communities must submit a proposal (usually developed with the assistance of a local uni-

versity or non-governmental organisation) to the federal environmental agency that describes the unique or significant ecological and social characteristics of the area in question. By proposing an MER, local fishing groups hope to gain greater control over their marine resources, including the ability to exclude outside users. They are also granted long term tenure over the resources with the assumption that more stable tenure will encourage a greater sense of ownership and result in greater protection of these resources. This approach is based on the assumption that local resource users, with support from the State, may be the best stewards of the marine resources their livelihoods depend on. If approved, representatives from the community and the state develop a utilisation plan via a series of participatory planning meetings that should involve all relevant stakeholders. Resource users can be represented by an existing group or association or if none is appropriate or available group is created for this purpose which consists of a board of elected representatives. It is via this organisation that user rights and responsibilities are established. Membership is mandatory over time and determines rights over the resource in question. Finally, the plan is set to work, and adapted over time to meet changing management needs.

In 1997, Brazil's first open-water MER was created in Arraial do Cabo. One of the primary goals of this integrated conservation and development initiatives is to protect the beach seining community that has traditionally fished in this area. The fishing practices employed by this group along with the formal and informal institutions that govern them provided the justification for the creation of this conservation and development area. The creation of this MER was also seen as a vehicle for the long-term protection of the area's rich marine ecosystem, nurtured by the up-welling phenomenon and intrinsically linked to these traditional activities. In part, protection of these aspects of the community is seen as important because local fishing activities are based on sustainable principals and local



source: www.ibama.gov.br

Figure 2. Present and Future Extractive Reserves (Courtesy Patricia Pinto da Silva)

knowledge.⁸

Beach seining

Beach seining takes place on the four main sand bottom beaches on the cape. In principal, seiners from all beaches abide by a similar set of rules which define timing, use rights and how fishing activities take place. On all but one beach, seining is done by day. The basic strategy for day seining throughout the cape is the same. This type of fishing requires clear placid water, high nearby hills and sandy coves in the coastline. Each canoe has approximately nine crewmembers collectively called the *companha*. Although all positions are important and necessary, the lookout is the cornerstone for this type of beach seining. Because beach seiners do not use bait and do not move from location to location looking for schools, they must actually see the fish that they are attempting to catch before they can effectively 'fence' them in with their net.

The lookout stands on the top of the hill to get a bird's-eye view of the incoming migra-

tory schools of fish (See Fig. 3). The clarity of the water is essential in order to spot incoming schools of fish as well as to identify the species, size and number present in the school, a process often referred to as "baptizing". The lookout baptises the schools and decides whether they are worthy and well placed to be caught.

Another important resource for the success of beach seining is the availability of a large dugout canoe. These are fashioned from huge trees and when finished are approximately one meter in diameter and seven to eight meters long (See Figs. 1 and 7). Four men maneuver the canoe (rowers), two men are responsible for placing the huge net in the water, and the skipper or *mestre* is responsible for co-coordinating this process by receiving hand signals from the distant lookout and relating them back to the rest of the team. The last member of the team stays on the beach throughout



Figure 3. Lookout spotting incoming schools of fish (Courtesy Patricia Pinto da Silva)

this process and is responsible for a rope connected to the net that he pulls when signaled. As soon as the signal is given and the net starts to go in the water, this person starts closing the sides of the net to prevent the fish from escaping. He is later joined by the rest of the crew and often by other participants who help in the lengthy affair of pulling the net on to shore (See Fig. 4).



Figure 4. Fishers and community members pull in the net (Courtesy Patricia Pinto da Silva)

The Fishing Culture of Arraial do Cabo

Arraial do Cabo means literally “Hamlet on the Cape”. In fact, Arraial do Cabo was not one hamlet but two (Praia dos Anjos and Praia Grande). Over time, it grew into four neighborhoods with the third developing into an Afro-Brazilian neighborhood after the abolition of slavery in 1888 and a fourth, Praia do Pontal, with the establishment of Alkalix chemical plant and housing for its upwardly mobile employees.

At the beginning of the 20th Century, the deep soft sand and lack of transport separated these hamlets. Now, increased urbanisation and paved roads have merged them together, transforming them from independent entities into neighborhoods of a larger municipality. The four main neighborhoods get their names from the beaches with which they are associated: *Praia dos Anjos* (Angel Beach), *Praia Grande* (Long Beach), *Praia* (Little Beach), and *Praia do Pontal* (Point Beach), indicating the importance of the beach in the lives of its residents. Today, although the municipality spans the four areas, these distinctions are still relevant.

Table 1. Number of fishers in Arraial do Cabo¹⁰

Hook and Line Fishers	1,000
Purse Seiners	80
SCUBA fishers	20
Shell Collectors	90
Beach Seiners	150
Total	1,340

Gear groups

Arraial do Cabo has a population of approximately 26,000 people.⁹ Though no official statistics exist, based on the number of participants in the different fisheries, there are approximately 1,340 fishers including shell-fishers (See Table 1). Fishing, therefore, represents an important source of employment and is an essential part of the local economy.

Fishers distinguish themselves from each other based on two primary factors, ethnicity and gear type, and divisions between fishers run deep. Long-term residents, who call themselves *cabistas*, regard other groups that have come in recent years to fish as outsiders and call them *caringos* (thought to be a variation on *gringo*). These groups rarely fish together and generally engage in different types of fishing activi-

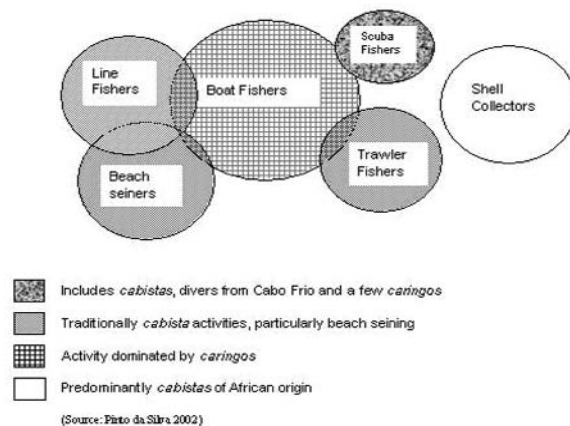


Figure 5. Group size and ethnic divisions among Arraial do Cabo fishers (Source: Pinto da Silva, 2002)

ties. Newcomers mainly use hook and line gear while *cabistas* tend towards other gear with beach seining being the most traditional. Beach seining means much more than just a type of fishing to *cabistas*. Seining is a central and unifying symbol of their collective identity and a ritualistic display of their cultural and historic connection to marine resources. Invariably, all Cabistas, had or have a family member that beach seines. Even those who do not seine participate by helping to pull in the net, or in the past by salting the fish after they were caught (a role traditionally filled by women). Figure 5 illustrates the different fishing modalities, the number of fishers involved in each, as well as the distribution of some of the different ethnic groups that participate in each.

Social groups, divisions and resource governing institutions

In the absence of government support and regulation, the beach seining community in Arraial do Cabo has been governed by a set of locally constructed and communally recognised institutions that regulate access to and use of common fishing grounds. Although originally a set of informal institutions, these rules were codified in 1921 by the local fishing guild.¹¹ Complex norms include restrictions on the type of gear, vessel and number of crew that can participate in addition to determining access to local fishing grounds.

This bundle of rules is called the *Direito do Dia* or Day Rights system. This system defines daily access to the resource through a system of rotational access. There are a certain number of 'fishing days' associated with each of the four local beaches that determine when each owner has the right to fish (See Table 2).

Given the local understanding

Table 2. Fishing days per beach¹²

Praia Grande	21 Days	42 canoes
Praia dos Anjos	12 Days	12 canoes
Prainha	7 Days	7 canoes
Praia do Pontal	4 Days	4 canoes

of the resource flow, Praia Grande, the first beach in the flow, has attracted many more fishers hoping to get a first chance at incoming shoals (See Fig. 6). To accommodate its popularity, more than one canoe fishes on a given day. Where canoes work in pairs, locally called *canoas casada*' or married canoes, each canoe takes turns casting their net. As the process of recoiling the net is time consuming, the presence of a second canoe avoids the possibility of shoals passing without being caught during

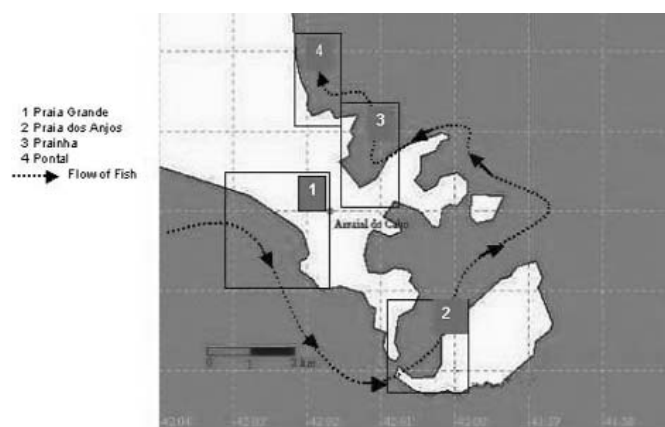


Figure 6. Resource flow around the cape (Source: Pinto da Silva, 2002)

Table 3. Rotational Access system on Praia Grande – “married canoes”¹⁴

Day	Canoe	Day	Canoe	Day	Canoe
Day 1	1-2	Day 8	15-16	Day 15	29-30
Day 2	3-4	Day 9	17-18	Day 16	31-32
Day 3	5-6	Day 10	19-20	Day 17	33-34
Day 4	7-8	Day 11	21-22	Day 18	35-36
Day 5	9-10	Day 12	23-24	Day 19	37-38
Day 6	11-12	Day 13	25-26	Day 20	39-40
Day 7	13-14	Day 14	27-28	Day 21	41-42
After day 21 the user access system starts again from day 1					

this process. On Praia Grande, “beach seining should never occur with greater or less than two canoes”.¹³ A breakdown of the canoe partnerships from Praia Grande is described in Table 3.

Although beach seiners are all *Cabistas*, significant divisions exist within this group. After 500 years, racial and ethnic differences and divisions between the beaches run deep. Locals often state that the different neighborhoods are like different tribes. Work teams are often made up of family members and historically, fishers lived in the neighborhood they fished in. Each neighborhood has kept many of the ethnic and racial characteristics of its colonial origins. Seiners from Praia Grande, for example, are largely of Portuguese decent, and those of Praia dos Anjos of French or northern European decent. Prainha’s residents are descendants of Africans forced into the transatlantic slave trade. These communities exist side by side, within a minute’s walk of one another.

The horizontal crew structure is no longer reflected in the ownership patterns of the days, nets, canoes and other means of production. In the past, because of the expense of the materials used in this activity, principally the net and canoe, groups of individuals would collectively own these items. Fifty years ago it would have been very common for a canoe to have three or four owners. As the nets are significantly more expensive than the canoes, they often had even more owners. These owners were most often crewmembers. Also, owners of canoes from each beach were typically residents of that beach. Praia Grande canoes were owned by people from Praia Grande, Praia dos Anjos canoes were owned by peo-

ple from Praia dos Anjos and so on. In recent years ownership patterns among beach seiners have changed dramatically. Only 12 percent of fishers in Arraial do Cabo are owners or part owners of the boats they fish on. Within beach seiners, concentration is even more marked. Within this fishery, a few individuals (father and son) from Praia Grande have amassed ownership of the majority of canoes and nets, thereby controlling the associated access days to the fishing grounds. Much to the resentment of fishers from other beaches, not only have they accumulated control over the Praia Grande fishery but they are also buying up the access days on other beaches. These owners are vertically integrated and own icehouses and fishmongers and therefore play an important role in setting the value of the catch. Ownership patterns on Praia dos Anjos reflect these changes. On Praia dos Anjos, ten individuals own parts of the twelve canoes along with access to the associated fishing grounds. Of these, five are residents of Praia dos Anjos and the other five are residents of Praia Grande. The five owners from Praia dos Anjos own 37.5 percent (4 ½ canoes) of the total while owners from Praia Grande own the lion’s share at 62.5 percent (7 ½

Table 4. Praia dos Anjos Ownership Breakdown¹⁵

Total # of owners on P. dos Anjos	10
# of owners who are P. dos Anjos residents	5
# of owners who are P. Grande residents	5
Percentage of total owned by P. dos Anjos residents	37.50 %
Percentage of total owned by P. Grande residents	62.50 %
Percentage of total owned by one family (from P. Grande)	50.00 %
Percentage of total owned by women (widows)	16.60 %

canoes). A single family from Praia Grande owns 50 percent of the total (see Table 4).

Seiners commonly expressed that they felt that their fishery was being overrun by a handful of powerful owners. In addition,

they complained that as these owners purchased "days" they would bring in their own crews to work these days thereby leave less fishing opportunities for resident seiners. This trend has only increased tension between the beaches.

Monitoring & Enforcement

Ostrom¹⁶ has referred to monitoring and enforcement as central to common property management regimes. For measures to be effective monitors should be accountable to the appropriators or monitoring should be carried out by the appropriators themselves.¹⁷ In Arraial do Cabo actions have historically been held in check by a variety of monitoring mechanisms. Many changes, including the concentration of ownership of both access to the fishing grounds and of gear used, have significantly altered the reliability of the monitoring system of this regime and some of these are no longer practiced. Others are still used on some beaches and not on others. Traditionally, each *companha* was required to have a monitor among the crew who was responsible for observing the activities, and reporting irregularities and infractions to the local fishing association.¹⁸ This meant that the association itself was involved in sanctioning canoes or owners who did not comply.

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Sanctions were gradual, but severe, and initial infractions were fined with subsequent ones leading to the exclusion of that canoe from the sequence. Fines were then invested in education and medical services in support of fishers and their families.

The most effective tool for monitoring access is still in use by all beaches and is inherent in the sequence itself. Because each *com-*

panha has an interest in and incentive to protect its 'day' and right to fish, the group will naturally ensure that other canoes comply with the system. For example, if a *companha* arrives on the beach on their fishing day and there is a canoe out of sequence already there, the *companha* that has the customary right to fish will fight to protect and maintain it.

It is not just the sequence, though, that provides these sorts of incentives. For the most part, unlike other fishing types, seining takes place in very accessible and public spaces. Because this fishery is such an intrinsic part of the local livelihoods and shared *cabista* identity, it is not just the fishers who know the rules. Canoe fishing is a spectacle that locals (including other types of fishermen) like to watch and participate in. Observers consist of fishers and non-fishers alike and they too play a role in supporting the system, including an awareness of who is and who is not upholding the rules.

Nevertheless, there are a number of major infractions occurring, particularly on Praia Grande, that are not being addressed. Powerful individuals with vested interests in the institutional arrangements that govern this fishery have pursued a policy of selective rule enforcement that protects their control over the system and minimises their investment. For example, there are significantly fewer gear sets (canoe and net) than there are days (e.g., there are approximately fifteen canoes/nets when there should be forty-two). In the past, this would not have been possible as each day was owned by a different set of individuals and the rules stipulated that each day would have a distinct set of gear associated with it. Therefore, a beach with 12 fishing days would have 12 canoes, nets, etc. Owners without fishing gear (or gear being repaired) would not be able to participate in the fishery. Overtime, a few

individuals with access to capital began to purchase the days (and associated gear sets) on the different beaches. Today, these individuals (locally referred to as the "big sharks") own most of the canoes and access days, and have the power to decide whether or to not invest in multiple gear sets in order to take advantage of their days. Typically they choose to own a couple of canoes/nets and fish on multiple days with each set. In addition, as owners also have the power to determine whether to allow new entrants to the fishery, they have successfully closed the doors to the fishery. Some fishers trying to enter the fishery on Praia Grande reported being physically threatened by these owners or by their employees to discourage their efforts.

Another significant infraction occurring on Praia Grande and impacting all the seining beaches is the practice of leaving the seine in the water unattended. Fishers from other beaches complain that this net disrupts the flow of fish upon which all seiners depend as schools 'hit' the net and then disperse in different directions to deeper waters. This has created problems between beaches and fishers from other beaches commonly complain that Praia Grande fishing practices are negatively impacting their activities and that they are not 'team players'.

Conservation: Seiners and the Marine Extractive Reserve

The Arraial do Cabo MER created a three mile fishing belt around the cape to be exclusively used and managed by the 'traditional' fishing population of that municipality. The assumption behind this approach to marine management was that by creating a restricted use area, governed by local fishers in collaboration with the federal environmental agency, small-scale fishing and the resources these fishers depend on, would be protected from

outside threats – such as the shrimp trawlers that commonly trawled close to shore. The ability for the reserve to achieve its social and conservation objectives therefore rests on the ability of local fishers to work together and with representatives from the federal government to govern this area.

The MER has the potential for providing significant usufruct property rights to the fishers included in the plan as each fisher was granted a permit allowing them access to the area for 60 years. Not only were fishing activities to be managed through the reserve but any activity that utilised the area within this three mile belt had to be approved by the managing council of the reserve. Other activities included recreational SCUBA diving, boat tours to nearby islands and oilrig repairs. Like other marine parks in Brazil (i.e., the archipelago of Fernando de Noronha), the Arraial do Cabo MER can charge user fees and thus raise funds to support the reserve.

Soon after the MER was created, a utilisation plan was developed through a series of meetings with local fishers, regional academics and government representatives to define the rules that represent the social contract among fishers as well as between fishers and government. The seiners' traditional institutions were automatically integrated into the plan. Article 5.1 of the plan states that "beach seining is permitted according to the norms of the right of way system that regulates the canoe sequence".¹⁹ The reserve, therefore, absorbed the existing beach seiners' common property regime (CPR) and expanded it to include all the different gear groups in the municipality.

The MER created a new decision-making forum, whereby non-owners have the same vote as owners and hook fishers

The Marine Environment Reserve created a new decision-making forum, whereby non-owners have the same vote as owners and hook fishers have the same say as beach seiners

have the same say as beach seiners. This was a new concept for seiners who had grown accustomed to following decisions made by gear owners. Gear owners felt threatened by this new power given to their employees. The establishment of the marine reserve, owners felt, bypassed their legitimacy

as the final decision-makers in the seiners' CPR. As a result most boycotted the process and encouraged seiners who worked for them to do the same.

Yet, their fears may not have been warranted. Upon the completion of the plan, few beach seiners had participated in any significant way. Only 34 percent of beach seiners were aware that members of the reserve have the right to vote. And, although many had attended meetings, only one seiner surveyed had voted in any meeting at the reserve headquarters.

Dependence on the resource could provide an important incentive to participate

ous work with a local industrial plant. Forty-two percent of active beach seiners are over 49 years old, and significantly, 32 percent are over 60. It is not uncommon to see seiners in their 80s pulling in nets (See Fig. 7).

The MER in Arraial do Cabo has introduced a more democratic decision-making forum for regulating fishing activities and addressing the concerns of this community. However, the system is beyond the reach of many fishers who find themselves constrained by the middlemen and owners for whom they work. Fishers are afraid of losing an important part of their livelihood by "sticking their necks out".

The creation of the MER has not yet managed to replace or strengthen the seiners' institutions. In fact, although the existence of a 'traditional population' and traditional resource management systems warranted the creation of this conservation and development unit, seiner's themselves do not seem to have been seriously involved in its design. Rather, assumptions were made by reserve planners about the quality of their resource management institutions.

Challenges and Opportunities

In Arraial do Cabo history and culture interact and provide challenges as well as opportunities for long-term collective conservation efforts. The physical characteristics of the cape

as well as the process by which the cape was colonised and developed contributed to the social divisions between neighborhoods that are still prevalent. Ironically, although deep divisions exist, until recently, strong resource management institu-



Figure 7. Photo of elderly work team (Courtesy Patricia Pinto da Silva)

in the reserve process. Most seiners (80%), however, have alternative sources of income outside of fishing. Many are employed by the local government and many more receive pensions from previ-

tions were in place that governed access to the marine resources upon which local livelihoods depended. However, social change over the last 30 years (including the concentration of ownership of access to the fishery) has strained these institutions and left them vulnerable to individual vested interests.

The following are some of the challenges and opportunities that exist for long-term conservation:

- The cape is a small geographic area and most fishers fish near the shore facilitating monitoring. Communication between resource users is facilitated by the size of the town. In addition, most of the fishing methods currently used are non-predatory and relatively sustainable, and therefore significant change was not required of the fishers in the MER management plan.
- Traditional fishing methods have been passed down from early indigenous tribes to more recent settlers. Informal institutions that governed beach seining were later formalised and defined when, where, how and who could fish. These institutions could have provided a strong foundation for long-term conservation efforts, but they have weakened in recent years.
- Half a millennia since colonisation, cultural distinctions between different ethnic groups are still visible in Arraial do Cabo. The municipality can almost be mapped in terms of waves of immigration. Northern European descendants live on Praia dos Anjos, southern European descendants on Praia Grande, descendants of African slaves on Prainha and more recent immigrants from the Northeast of Brazil are taking over the hills surrounding the center. The same factors that bond people together in certain communities keep the different communities from working

together towards a common goal. Fishers repeatedly identified the long-standing rivalries between the residents of beaches and different ethnic groups as barriers for collaborative management.

Policy Implications

- History, culture and local identity can reinforce or preclude the likelihood of successful collaborative management. Therefore, an analysis of the social context within which these reserves are to be created should be carried out in order to better adapt management structures to social realities.
- Coastal communities may have resource management regimes in place that should be considered and respected when implementing Marine Extractive Reserves. However, policy makers and practitioners should not assume that local resource governing institutions are robust. Social change tests the resilience of these institutions and they may need to be strengthened or rebuilt. Although resource governing institutions were in place in Arraial do Cabo, they have weakened over time and are no longer robust.
- Coastal communities are not organic wholes. Difference and diversity must be taken into account as well as existing power structures that may distort or constrain participation in resource management regimes. If not, extractive reserves could potentially reinforce inequitable power structures instead of promoting broad-based participatory conservation.
- It may be necessary to work with communities and State representatives to build their capacity to engage and effectively participate in this new type of resource management initiative. In Brazil, the state does not have a history

of collaborative management with fishing groups and or/decentralised management. For fishing representatives, training could include financial management skills, group facilitation skills, and participatory research methods.

- MER's will not be quick fixes. It may take years for an MER to become established in a community. Practitioners, funding agencies and others involved in the process will need to commit to this long-term community based conservation process in order to achieve socially and environmentally sustainable results.

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- 5 Baland and Plateau, 1996; Ghimire and Pimbert, 1997; Diegues, 1994; Ostrom, 1990.
- 6 Ecosystem characterised by sand dunes, cactus, and low-lying, fruit-bearing shrubs and trees.
- 7 FEEMA, 1998.
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- 9 PMAC, 2000.
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- 14 Adapted from Britto, 1999.
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The Bawarias of India: from hunters to “green guards”?

Bahar Dutt

Summary. The Bawarias are a hunting nomadic community found in several states of northern India. This paper examines the impact of several laws such as the Indian Wildlife (Protection) Act (1972), and the Criminal Tribes Act (1871), now known as the Habitual Offenders Act (1953) on the livelihoods of the Bawarias. As a result of the ban on hunting the Bawarias have taken up occupations such as *chowkidari* (protection of agricultural fields against crop-raiding animals). At a time when human-wildlife conflicts are many, the Bawarias are providing a valuable service to farmers by protecting agricultural fields from crop-raiding animals such as wild pigs (*Sus scrofa*) and nilgai (*Bocephalus tragocamelus*). This strategy needs encouragement and recognition at the policy level and by the local forest department which has so far viewed the Bawarias as a threat to wild animals and biodiversity. Conflict with land-owning farming community and deep-rooted prejudices against them have however led to tremendous human rights violations and made it difficult for this nomadic community to practise their occupation or build settlements anywhere. The Bawarias should be recognised as indigenous “green guards” and their traditional knowledge and skills in dealing with wildlife should be more consciously and effectively employed for conservation.

In the beginning of time when earth was being created God asked everyone to choose any object which would represent what they would do on earth. The Brahmins (the priestly caste) selected books, the Kshatriyas (the warrior caste) got swords, and the peasants chose the sickle. When it was the turn of the Bawaria, he hid a golden brick underneath his shirt and said to God ‘I want nothing’. Since then, God got angry and said ‘Go you are cursed for the rest of your lives, you will now live in the forest and will only steal from other people’. Since then the Bawarias have been living in the forest’.

A story about how the Bawarias were born as told by Dholi Bawaria

South Asia has the world’s largest nomadic population. In India alone, roughly seven percent of the population is nomadic and consists of about 500 different communities.¹ The Bawarias are one such nomadic community. According to the Census of India of 1881 the Bawarias are described as a ‘hunting community who derive their name from the word *bawar* or noose with which they snare wild animals’. The census further states that the Bawarias are “much addicted to crime and thieving comes easily to them. Their skill in tracking wild animals is notorious”.

Two laws, one ancient and one more recent, have severely impacted the livelihoods of the Bawarias. In British India under the Criminal Tribals Act of 1871, over 200 communities had been declared as criminals. This was used by the British to consolidate their rule over certain tribes, including the Bawarias. The act was repealed following independence of India but the stigma attached to such communities, through the legislation, continues. Further, in a bid to protect dwindling wildlife, the Indian Wildlife Protection Act of 1972 declared all hunting as “illegal” thus criminalizing the traditional occupation of the Bawarias.



Picture 1. A Bawaria hunter with his hunting dog. (Courtesy Ramesh Kumar).

In this paper, I examine the livelihood strategies of the Bawarias and show how a community used to be perceived as a threat to wild animals is currently, without due recognition, serving to protect biodiversity. In a primarily agricultural economy, the Bawarias have carved a niche for themselves by providing services of crop-protection to land-owning communities. The Bawarias have adjusted to change by embracing activities that diminish the motivation or incentive on the part of settled agriculturalists to kill crop-raiding wildlife. Their knowledge and labour serve conservation but unfortunately go unrecognised because of their stigmatised status as a criminal tribe.

The nomads in India today

Historically, across India, villages were frequently visited by nomadic communities.² The *lohars*, or the blacksmiths, would arrive at the beginning of the agricultural season to repair and sell agricultural tools and implements; the pastoral groups such as the Rabaris would build temporary shelters on agricultural land where their cattle would provide essential fertilisers for the fields. Before easy means of transport and communication were available, nomadic groups served as useful adjuncts to sedentary soci-

eties. As occupational groups of hunters, trappers, blacksmiths, basket weavers and entertainers like puppeteers, acrobats fortune-tellers, singers and dancers, the nomads shared a symbiotic relationship with settled people. In return for their services they were allowed to squat on the village commons and use the village resources such as water or pasture lands for grazing their cattle, till they moved on to their next *dera* (settlement).

According to sociologists, nomadism served as an important economic strategy that enabled mobile communities to exploit markets over a much larger area. Several of these groups depend substantially on wild animal and plant resources and have been



Picture 2. A Bawaria woman making a grinding stone. (Courtesy Ramesh Kumar.)

severely affected by wildlife conservation policies which seek to reduce such use.³

Nomadic lifestyle and wildlife conservation

The wildlife conservation policies of the Indian government have involved a ban on grazing, felling, foraging and hunting. Wildlife policies have led many National Parks to expel foragers and pastoralists.⁴ In the current study we found that the Bawarias, who used to live and hunt inside the Sariska National Park, in the north western state of Rajasthan, gave up their

dwelling after the declaration of the area as a park and prefer to live far away from the watchful eye of the Forest Department. Coupled with government policy, demographic pressures have further made it difficult for nomads to set up their dwellings or practice their traditional livelihood. No expanses are left uncultivated or unoccupied; a study of arid villages across India shows a decline of 30-50% in common property resources leading to shrinking pastures.⁵ Agricultural policies leading to consolidation of land holdings, irrigation and mechanisation have drastically changed nomadic-sedentary relations.⁶ As the urban sprawl of cities expands and village commons shrink nomadic communities find themselves displaced constantly. The historic need to be on the move was economic. Today it is driven by a number of other factors, such as conflicts with villagers over use of natural resources or lack of space to build settlements. In sum, nomadic communities find it difficult to practice their traditional livelihood strategies.

About the study area

The Bawarias interviewed in this study are from Alwar district in the north western state of Rajasthan, India. The district of Alwar it is said derives its name from the Salwa tribe that are mentioned in the ancient Indian manuscript of *Satpatha Brahmana*. The city was originally Salwapur, then Salwar and eventually Alwar. The district is situated in the north east of Rajasthan between 27.4' and 28.4' north latitudes and 76.7 and 77.13' east longitude, and is famous for Sariska National Park, which has a high density of wild fauna and flora. Sariska National Park used to be the hunting grounds for the royal families and was declared a wildlife sanctuary in 1956. The area was subsequently accorded the highest degree of protection as a National Park and in 1985 as a Tiger Reserve. Besides the tiger (*Panthera tigris*)

a number of herbivores like spotted deer (*Axis axis*) and sambar (*Cervus unicolor*) are found in high densities.⁷

Livelihoods profile of a hunting community

The study involved extensive dialogue with members of the Bawaria community in the state of Rajasthan, night halts and participatory workshops. Subsequently a detailed questionnaire was developed and 105 individuals in the region were interviewed. The main aim was to find out how modern conservation laws have impacted the livelihoods of this hunting community.

The Bawarias communities responded to the changing times by turning to occupations such as *chowkidari* (crop protection) and animal husbandry, which are legal and of service to the rest of society.

The occupation that was followed for more than 6 months a year was recorded as the main occupation. The main occupation for most Bawarias today is *chowkidari* or guarding agricultural fields from crop-raiding animals such as nilgai (*Bosephalus tragocamelus*) an antelope species that is found in abundance across northern and western India. In return for their services they are offered a few sacks of foodgrains and the right to build a temporary shelter on the farmer's field. Of the population sampled, a sizeable number, that is nearly 80% of the Bawarias were engaged in *chowkidari* as their main occupation. Further, nearly 15% were practising agriculture on land owned by them and 5% were engaged in daily wage work which included farm labour or construction work.

At the end of the agricultural season, fearing that the Bawarias will set up a permanent home on their land, the landowners ask them to move as soon as the crops are harvested. The Bawarias move their tents

and shift to offer their services to another landowner. During post-harvest periods of unemployment, from April to May, the Bawarias collect foodgrains in return for the work they have done for the landowners. Payment is in kind and is usually one sack of wheat for every field that a Bawaria has guarded. Some Bawarias manage to collect as many as 10 kilograms of wheat, half of which is consumed and the rest sold in the market for cash.

Chowkidari however was not always the main occupation of this community. The livelihoods of the Bawarias have undergone a tremendous change. The Bawarias were famed hunters, and trackers who made a living from killing wild animals and selling their parts in local villages or for self consumption. They also assisted the royal families with their hunts in the nearby forest which is now known as Sariska National Park⁸. Nearly 70% of the Bawarias of the previous generation were engaged in hunting, 10% in *chowkidari*. The categories of agriculture and daily wage work remained the same as the current generation i.e. 15% of the families were engaged in agriculture and 5% in daily wage work.

There has thus been a considerable decline in the traditional occupation of the Bawarias from one generation to another. In the current generation out of all the families surveyed not one admitted to practising hunting as an occupation. When asked for the reasons for the decline in their occupation, a substantial number (90%) admitted the introduction of wildlife laws as a reason, while 5% stated declining wildlife populations and another 5% stated a recurring drought in the semi-arid region of Rajasthan as a reason why hunting as an occupation has declined.

The livelihood patterns further indicate a strategy of 'livelihood diversification' whereby the communities turn to more than one



Picture 3. The grinding stones made by Bawaria women are sold in the local market. (Courtesy Ramesh Kumar).

occupation for sustenance. This feature is especially common in arid and semi-arid landscapes, where agriculture cannot provide sustenance throughout the year. Supplementary occupations are practiced through the year and include work such as *padda*⁹, honey collection and daily wage work especially during the lean months when there is no *chowkidari* and the crops have been harvested. Another source of income is *chakki khodna* or making grinding stones which are then sold in the local market.

Figure 1. Occupational profile of current generation of Bawarias

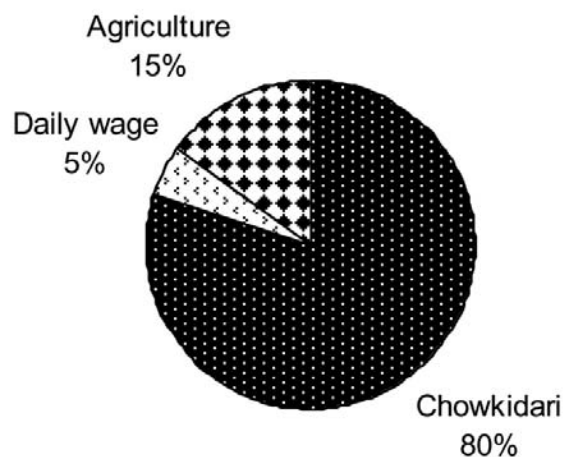
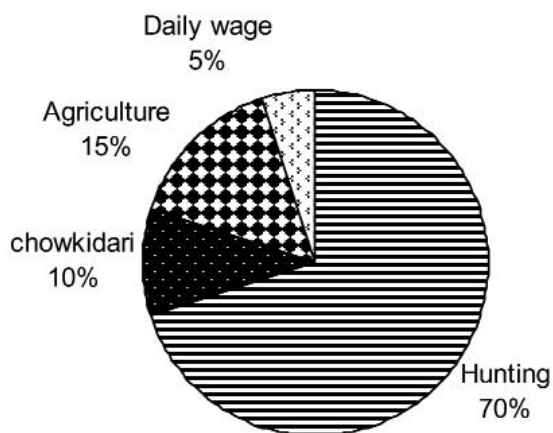


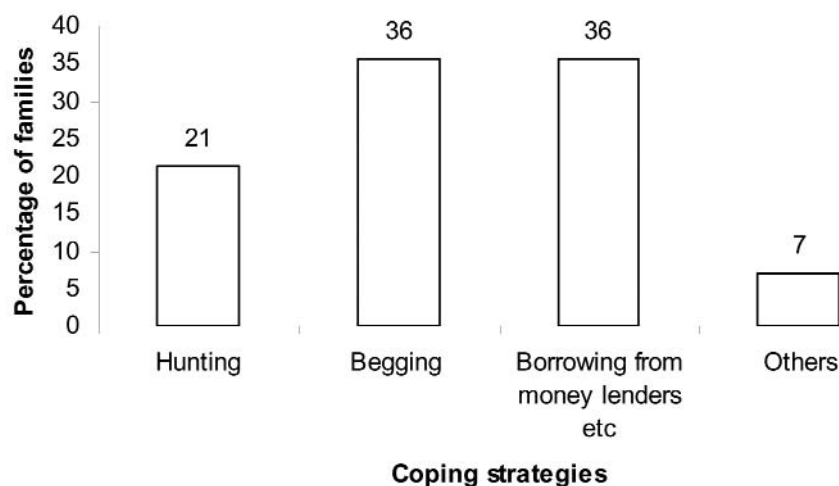
Figure 2. Occupational profile of previous generation of Bawarias



Food security and its relation to hunting

As many as 70% of the families interviewed stated to face a shortage of food through the year. In times of shortage of food, nearly 21% of the families turn to hunting wild animals in order to meet their food needs, 36% turn to begging from nearby villages or *zamindars* and 36% borrowed money from money lenders. This shows the vulnerability of the Bawarias and the abject poverty in which the community lives.

Figure 3. Coping strategies of Bawarias during periods of shortage of food



The Bawarias frequent different areas for hunting wild animals though hunting is banned everywhere in India. Of people interviewed 66% admitted to hunting in the areas close to villages, while 21% went hunting in a reserve forest and 12% went hunting in nearby agricultural fields.

The Bawarias interviewed for this study all had country made rifles which they use for firing in the air for driving away crop-raiding animals. The *nilgai* which is the major crop-raiding animal found in this area is driven away from the fields by the Bawarias, but not killed due to the religious sanctity that

the animal enjoys.

Considered as a 'blue cow' (although it is an antelope species) it is revered in hindu religion and mythology and seldom killed by farmers despite the damage it causes to the crops.

A Bawaria family also keeps 2-3 dogs that guard their settlements and are used to assist them on their hunting trips. As mentioned, hunting which used to be the mainstay of the community is today dif-

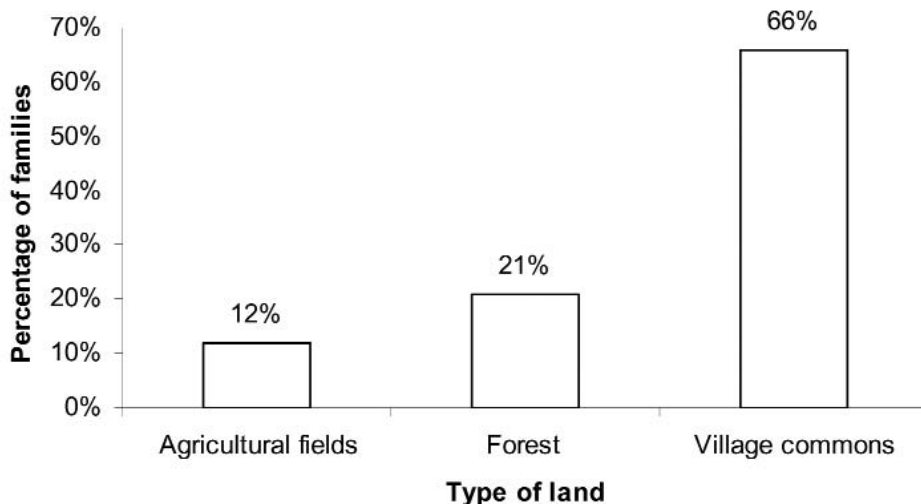
ficult to practice due to the strict wildlife laws and the presence of the State Forest Department. Still many Bawarias continue hunting if not for trade, then for food especially during times of food shortage. The animals that are hunted are mostly small mammals and birds such as Indian Hare *Lepus spp.* Common Mongoose *Herpestes edwardsi* Blue Rock Pigeon *Columba livia*, Grey

The *nilgai* is considered as a 'blue cow' (although it is an antelope species) it is revered in hindu religion and mythology and seldom killed by farmers despite the damage it causes to the crops.

Partridge *Francolinus pondicerianus* and Grey Jungle Fowl *Gallus sonneratii*, among others.

sewaichak land. The village commons that were earlier used by nomadic communities to set up their tents are today shrinking,

Figure 4. Areas frequented by Bawarias for hunting



which explains why the Bawarias have to set up their tents on private lands. This creates the potential for conflict with upper castes, and disputes over sharing of resources such as water. Almost 82% of the Bawarias interviewed reported that their pots were broken just for trying to collect water from the village well. Further, 69% stated conflict with *zamindars* (land owners) as the reason for their shifting their *dera*. This figure thus denotes that while nomadism or "being on the move" was earlier an economic strategy for communities such as the Bawarias, today it is more related to a social imperative.

Figure 5. Categories of land used for Bawaria settlements



Social prejudices against the community

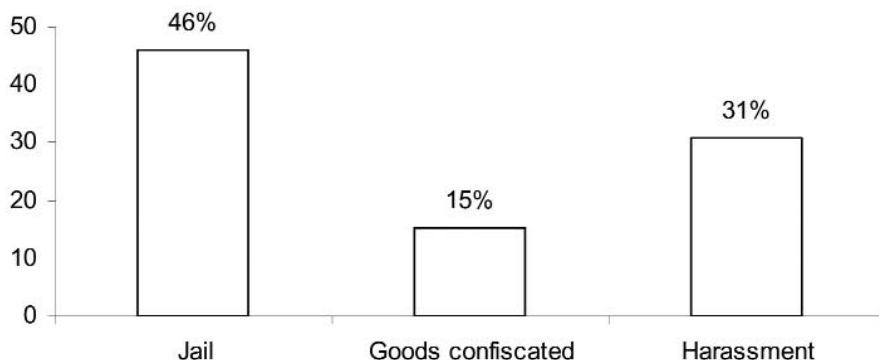
Nearly 55% of the families were settled on private (*zamindar's*) land on the fringes of agricultural fields. Only 5% of the families were settled on village commons or

Almost 82% of the Bawarias interviewed reported that their pots were broken just for trying to collect water from the village well.

on private (*zamindar's*) land on the fringes of agricultural fields. Only 5% of the families were settled on village commons or

Partially because of the stigma associated with belonging to a "criminal tribe", as many as 65% of the Bawarias interviewed had faced harassment from the police and law enforcement agencies. Of these, nearly 46% had been sent to jail, 16% had their goods confiscated and 31% has faced general harassment such as being poked with sticks, being roughed-up or beaten.

Figure 6. Percentage of Bawarias who have had encounters with enforcement agencies



Conclusions

The results of my study of the Bawarias can be summarised as follows:

- There has been a significant change in the main occupation of the Bawarias from one generation to another. In the current generation 80% of the families interviewed practise *chowkidari* (crop-protection) while in the previous generation this number was only 10%.
- A significant percentage (70%) of Bawaria families face shortage of food throughout the year and 21% of the families turn to hunting in order to make up for this shortage. This implies that despite their occupation being declared as illegal some families still practice hunting to make up for shortage of food.
- 65% of the Bawarias interviewed have faced harassment from law enforcement agencies such as the police. Of these nearly 46% have been sent to jail, 16% have had their goods confiscated while 31% have faced cases of harassment such as poking with a stick, being roughed up or beaten.

The Bawarias are a community in transition. Two laws: the Indian Wildlife

Protection Act and Criminal Tribes Act have rendered the livelihood of this community basically impossible to sustain. Nomadism as a way of life— which made sense in the past as a viable economic and ecological strategy when hunting was not banned— is of no relevance today. The Bawarias communities responded to the changing times by turning to

occupations such as *chowkidari* (crop protection) and animal husbandry, which are legal and of service to the rest of society. And yet the stigma of being a criminal tribe and belonging to a lower caste has made it impossible for them to set up their tents anywhere without getting into conflict with surrounding villages.

Short-sighted policies on the part of the governments in the past have made nomads sceptical of participation in any schemes. For instance, in 1960, the Rajasthan Government had introduced compulsory housing for the *Gaduliya lohars*, another nomadic community of blacksmiths in the state. The scheme failed as it did not address the livelihood needs of the community. Any attempts to support and help nomadic communities must take into account their livelihood needs, otherwise chances are that it might even have adverse impacts.

At a time when human-wildlife conflicts are many, the Bawarias are providing a valuable service to farmers by protecting agricultural fields from crop-raiding animals such as the wild pigs (*Sus scrofa*) and the *nilgai* (*Bocephalus tragocamelus*). This strategy needs encouragement and recognition at the policy level and by the

local forest department, which has so far viewed the Bawarias as a threat to wild animals and biodiversity. The Indian government should rather recognise them as indigenous 'green guards', protecting crops from wild animals and thus performing a very valuable role in a largely agrarian society. A formal recognition of this will help to both eliminate the social prejudice against these peoples and contribute significantly to reducing human-wildlife conflict in many parts of rural India.



Picture 4. A Bawaria man with an idol of their goddess wrapped safely to protect it from dust. Due to their nomadic way of life, the idols of gods and goddesses are wrapped and kept on top of tree. They are brought down only during festivals. (Courtesy Ramesh Kumar).

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- 3 Malhotra *et al.*, 1982; Malhotra and Gadgil, 1983.
- 4 Rangarajan, 1996.
- 5 Jodha, 1991.
- 6 Rao and Casimir, 2003.
- 7 Ministry of Environment and Forests, 2001.
- 8 Sualal Bawaria, personal communication, 2003.
- 9 The *padma* is the male buffalo and it is a common domestic animal owned by the Bawarias. The *padma* is used to provide mating services for the villages along the road, which get their female buffaloes to the Bawarias for impregnation. Since the Bawarias are nomadic, this is a good strategy to ensure that there is no inbreeding. For a successful mating the Bawaria charge Rs 60-70. The *padma* thus serves as a supplementary source of income, especially useful when *chowkidari* work has stopped.

La Somma: forest management, new "ruralness", and agro-tourism in the uplands of Umbria (Central Italy)

Patrizio Warren

Summary. Most of the rugged territory of the Umbria region, in central Italy, is still covered by chestnut, beech, durmast and oak forests. Besides retaining water and preventing erosion, forests are rich in biodiversity and shape the beautiful landscape of the region. For these reasons, their exploitation and use has been submitted to strict conservationist regulations since the 1970s. The policy was largely based on two assumptions: i) Umbrian forest were considered to be largely "natural" and to have been historically subjected to limited human intervention; and (ii) the importance of forestry exploitation for upland farmers livelihoods was deemed disappearing as a result of the country's major "development" thrust. Evidence presented in this case study challenges both assumptions. Analysis of the way in which a family of Umbrian upland farmers has managed during the last 50 years their forest land suggests that the ecology of Umbrian forest has historically depended, and still significantly depends today, on human interventions. This includes manuring, introduction of new species, selective cutting of trees and de-stocking of intrusive animal species. Moreover, livelihoods analysis indicates that forest products (chestnuts, firewood, posts, mushrooms, fodder, game) are still important assets in the economy of this family, as well as forest landscape and territory (agro-tourism, horseback trekking). Based on the above, two visions of the importance of forestry conservation are contrasted: the official one, which looks at the forest as an immutable "natural monument" to be preserved for future generations; and the one of the informants, who look primarily at the forest, as a "natural capital" asset, which must be wisely cared for to nurture the family now and in the future. Links between the latter vision and the cultural background of Umbrian farmers are briefly explored. A number of questions are raised about the opportunity of articulating more appropriate environmental policies and regulations, inspired by a livelihoods-based approach to forest conservation.

Umbria, il cuore verde dell'Italia

("Umbria, Italy's green heart"): tourism advertising captures two outstanding features of this region: being located at the very crossroad of the peninsula and its luxuriant countryside, most of which is still covered by forests and prairies. Since antiquity, Umbria has been a major pot of Italian peoples and cultures. Etruscans and Romans fought for control of the region and founded many of its towns and villages. After the fall of the Roman Empire, Umbria became one of the cradles of medieval civilisation. A few centuries later, Umbrian artists and artisans contributed to the Italian

Renaissance. Thus, Umbria has a rich cultural heritage and is a popular "art tourism" destination. Historically, Umbria's cities have depended on the surrounding countryside. In the valleys, soil is fertile and water is abundant, although arable land is significantly limited by the rugged hills and mountain ranges, which cover most of the region. Olive tree cultivation and terracing have made possible the extension of the arable surface. Yet, in many areas this has proved unfeasible or less remunerative than exploiting the forest and rangelands for timber, firewood, fodder, chestnuts, game, mushrooms, and wild fruits.

Umbrian peasant farming has been traditionally based on a mix of cereal and legume cropping (in the valleys), tree cropping (on the hills), and animal breed-

Umbrian peasant livelihoods has been traditionally based on a mix of cereal and legume cropping, tree cropping, and animal breeding and forestry

ing and forestry (in the uplands). This mixed livelihood strategy, is still practiced by Zi' Bruno Bevilacqua, a seventy year old farmer from Acqualacastagna, a small hamlet in the uplands of Spoleto. Zi' Bruno's farm is located in a small watershed, ranging from 600 to 900 meters above sea level. Downstream, close to the hamlet, there are three arable plots that Zi' Bruno cultivates with maize, potatoes, beans and pasture on rotation. In this area there is also a vegetable garden, a fruit orchard, a pen for courtyard animals and a stable where cattle is kept during the cold winter months. Food crops and products are mostly consumed on farm. Money comes primarily from 30 ha. of upland forest that cover the upstream part of the watershed. This includes five ha. of hundred-year-old *marroni* chestnut trees (a species introduced in the area at the beginning of the XIX century) which produce a highly valuable variety of chestnut used by the confectionery industry to prepare *marrons glacés*. Posts and firewood are other important products in Zi' Bruno's forestry enterprise. Moreover, indigenous cattle and horses are pastured in enclosed glades and woods. Ultimately, every year the forest provides plenty of mushrooms and a good catch of wild bores. These

hunting and gathering products are consumed by the household or sold to Spoleto's restaurants.

Forest is a very important capital asset in Zi' Bruno's livelihood, and has to be managed wisely. To ensure a good yield and facilitate harvesting, chestnut tree plots must be cleared from secondary vegetation every two years. Firewood cutting in the sloped small-chestnut (*castagno a bosco*) and small-durmast (*roverelle*) forest must be done wisely in order to preserve the strongest and biggest specimens (which would be better exploited in the future for posts and timber). Cattle and horses must be rotated from one glade to the other, in order to avoid overgrazing and erosion. All these forestry activities require a lot of work, most of which can only be done by hand. As sons and daughters have left Acqualacastagna, Zi' Bruno and his wife run the farm by themselves, with the help of some occasional worker or neighbor. Yet, the workload is becoming too heavy even for two strong and healthy rural elders. They have some savings and a pension from the Peasant Union, which will allow them to survive when they will no longer be able to continue forestry work. But what about the land and the forest? Should these be sold or left to somebody who does not care nor has the knowledge to maintain them? What will happen to the *marroni* chestnut and timber trees and the glades where the nutritious grazing species grow? What will be the fate of the natural capital that Zi' Bruno and his wife have nurtured throughout their life?

After the major crisis that affected the countryside in the 1960s and 1970s, agro-tourism and other innovative enterprises are revitalizing Umbria's rural livelihood systems



Figure 1. The Acqualacastagna watershed (Courtesy Patrizio Warren)

Ten years ago it would have been difficult to give a hopeful answer to these ques-

tions. Yet, things are changing in rural Central Italy. The exodus to the city is slowing down and many people are discovering or re-discovering ruralness not only as a lifestyle, but also as a livelihood opportunity. The story of Giancarlo and Agostino, Zi' Bruno's nephews, illustrates how this new "ruralness" relates to the economic, social and cultural background of ancient Umbrian peasantry. It also shows how hybridisation between this heritage and the opportunities offered by a burgeoning agro-tourism market has contributed to the development of a new form of sustainable forest use.

Giancarlo and Agostino Bevilacqua are Nonno Pietro's sons. Like Zi' Bruno, Nonno Pietro has spent most of his life in Acqualacastagna with his wife Nonna Melinda, exploiting his share of the family land and forest. The married couple gave the two children the opportunity to attend school in Spoleto. Thus, for most of their childhood and teenage years, Giancarlo and Agostino commuted daily to town, together with the other kids from Acqualacastagna and the neighboring village of Montebibbico (most of whom were relatives). Yet, they spent most of their afternoons, weekends and holidays in the countryside. There were not many things to do in the village for a kid. Galloping on local packhorses on the lumber trails in the forest up to the open upland prairies was perhaps the most exciting activity. Thus, the two brothers and their friends became expert and reckless riders. As soon as they started earning some money from summer jobs, the packhorses were replaced with better and faster animals, which were kept in their fathers' stables. Agostino and Giancarlo, who are now in their forties, remember this period as the most carefree and happy of their life. But childhood is short in the countryside and the time soon came for them to find their way in adult life and marry.

During the 1970s, the Umbrian upland offered almost no opportunities for a young man. Farms were neither large nor productive enough to support more than one family. Moreover, girls were not willing to live in the countryside. The only reasonable thing that a young man could do was to look for a job in town. Giancarlo went to the nearby iron and steel center of Terni where he got a blue-collar job. Agostino moved to Spoleto, where he undertook different jobs and enterprises. The city was generous with the two young men: in a few years they saved enough money to buy a house and married Clara and Giuliana, two handsome and well-to-do girls. Yet, they continued to assist their parents in running the family farm during the weekend and the holidays. They also continued to meet with a group of old friends (most of whom had also migrated to town) to eat, drink wine and ride horses.

One day after lunch somebody came up with the idea of opening a horse-riding center in the area. "You know – the man said – I have got friends in Terni and Spoleto who own horses and who are sick and tired of these fancy horse-riding clubs for rich people. They are looking for a cheaper place to keep and ride their animals. I also met these people from the Horse Tourism Association. These guys are very different from those snobs of the horse-jumping federation. They told me that in Perugia and in Rome there are many people willing and capable to pay for doing what we always did: riding horses in the forest and mountains. They describe it with an English phrase: "horseback trekking". Here, we have land and stables where horses can be kept, we have fodder and water, we know how to manage the animals, we know each and every path in this area... So, why don't we open a horse trekking center? I believe that we should try." This speech triggered a discussion that lasted until there was no wine left in

La Somma: a horse-riding and agro-tourism enterprise in the uplands of Spoleto

the *damigiana*. At that point, nobody was in any condition to make a meaningful decision. Yet Agostino could not sleep that night. He was bored of spending his days doing silly jobs in Spoleto and

the horse riding center struck him as an inspiring opportunity to have fun while making a living.

In the following days, Agostino discussed the subject with his brother Giancarlo and Nonno Pietro. After a lot of talk he was able to convince his brother and his father to conduct a small-scale test. The women of the family were initially very resistant. They look at the horse-riding center as a childish project born of a drunken conversation. However, they eventually accepted the idea of a trial run, under the conditions that their husbands not resign from their regular and "serious" jobs and that the

the big hill that dominates Nonno Pietro's land and the Acqualacastagna watershed. This place, known as *La Somma* (which means "the top"), was very close to the asphalt road and flat enough to allow clearing a one-hectare open space with minimum bulldozer work. It also enjoyed a beautiful view over the Central Apennine range and the Terni valley. Demand for boarding horses, horse-riding lessons and horse trekking grew slowly at the beginning. Yet, thanks also to their friendly touch, Agostino and Giancarlo secured an ever-increasing number of customers. Soon *La Somma* became a regular destination for horse-trekking fans from the neighboring towns, as well as from Perugia and Rome. Some of these guests also took advantage of bed and breakfast accommodation in Nonno Pietro's and Zi' Bruno's houses in Acqualacastagna.

By 1995, the business had become so profitable that Agostino began to seriously consider giving up his business in Spoleto and working at *La Somma* on a full time basis. In the meantime, the steel factory where Giancarlo was working underwent a "restructuring" process. Incentives were made available to workers willing to resign "spontaneously", and Giancarlo, who also felt sick and tired of the factory work, eventually accepted the special severance offered by the company.

One year later, an earthquake hit Umbria, affecting also Agostino's and Giancarlo's houses in Spoleto. The two brothers and their families had to move to the small wooden cabin they had constructed near the horse-riding center. During the long and cold winter, adults and kids realised that living together in the countryside was not bad at all. When the snow melted and spring came, men, women and children

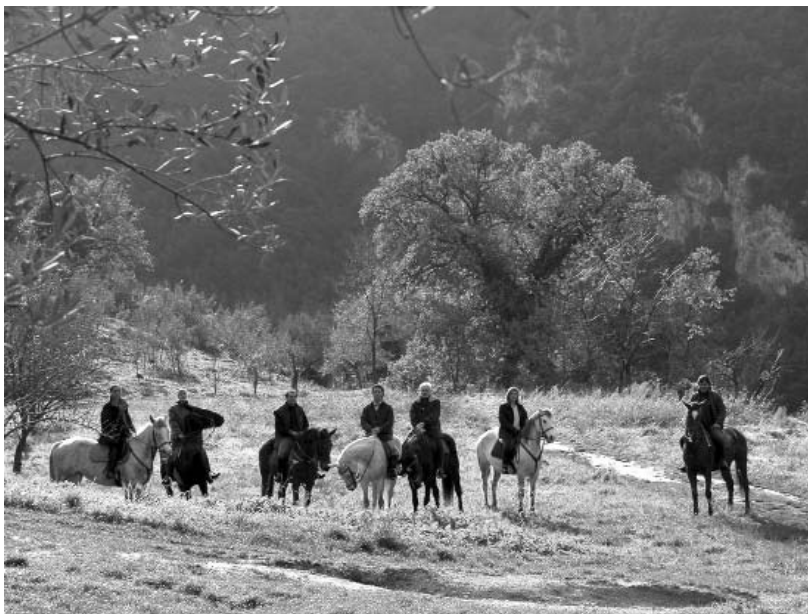


Figure 2. Horse-trekking to Montebibico (Courtesy Patrizio Warren)

family continue to live in town.

Within a few months a stable and a paddock had been established on the top of

felt ready to make the big decision. The earthquake had prompted a derogation to the law which prevents construction in forest areas, and Nonno Pietro, Giancarlo and Agostino received permission to build a brand new house at *La Somma*, big enough to host the three families. As soon as Nonno Pietro and his wife moved to the new building, Giancarlo invested his severance in renovating the old family house in Acqualacastagna, converting it to two small flats which could be rented to riders wishing to stay overnight. Thanks also to the agrotourism boom that developed in Central Italy during those years, demand for accommodation and catering services in *La Somma* grew rapidly. A restaurant hall and four new flats had to be built several years later on the esplanade. This required a long negotiation with regional and municipal authorities, who eventually approved the construction of a new stable and the transformation of the old one into an agrotourism lodge.

Currently, *La Somma* is among the wealthier rural enterprises of the area. Income is generated primarily by providing services to tourists and riders – that is, by a “non conventional” activity targeting a very specific niche market. However, the economics of *La Somma* is still deeply rooted in the ancient livelihood practice of Umbrian upland farmers. Forest and mountain are important not only as an attraction for tourists, but also as source of fodder for the 80 horses owned or hosted by the center. Moreover, the conventional production of chestnuts, firewood and posts continue to be an important item in the Bevilacqua family budget.

An important share of the food consumed by the two families and offered to guests is home made. Soil and slope does not allow for agriculture at *La Somma*, but land and fodder are enough

to keep a few heads of cattle and some sheep. Home kitchen and catering leftovers are given to a few pigs, from which ham, salami and sausages are made. Moreover surplus firewood and horse manure are exchanged for vegetables, wine, oil and other agricultural goods with relatives and neighbors owning arable land downstream (including Zi’Bruno).

Division of labor within the extended family is an important commonality between the household economy of *La Somma* and the traditional livelihoods of Umbrian peasants livelihoods.

Division of labor within the extended family is an additional important commonality between the household economy of *La Somma* and the ancient Umbrian peasants livelihoods. Every member of the family has specific responsibilities in the enterprise. Giancarlo, the elder brother, is responsible for management, administration and relationships with public authorities and customers. He also contracts and supervises wage-laborers for harvesting chestnuts and cutting firewood. Moreover, thanks to the skill he learned in town,



Figure 3. In the chestnut wood (Courtesy Patrizio Warren)

Giancarlo takes care of masonry, electrical work, plumbing and other building and maintenance tasks. Women are in charge of hospitality and catering, under the supervision of the two brothers' mother. 75 year old Nonno Pietro continues to take care of the courtyard animals and the few cattle. Agostino, on the other hand, is primarily responsible for horses and horse-riding activities. His 22 year-old son Andrea, who has an official diploma as a horse-riding instructor, assists him. The second cousins Riccardo and Maurizio work as trekking guides and grooms, while Giancarlo's daughters Cristina and Valentina are in-charge of the Pony Club. Also Lorenzo, the 13-year-old son of Agostino and Giuliana, is expected to contribute to the horse-riding center activity by saddling and harnessing horses and keeping the stables clean. As compensation for his/her personal contribution, each member of the family is entitled with personal assets (the flats, the horses, the stables, the chestnut woods, the forest, etc.) and has access to an individual share of the earning generated by their use. However, the bulk of the money generated by the enterprise is managed collectively to pay debts or make new investments according to needs, opportunities, and contingencies. Slow but steady accumulation is indeed a major goal of this petty-capitalist neo-rural enterprise.

It is important to stress that from a financial point of view *La Somma* would not work if a regular monthly salary was paid to each one of the ten individuals that work on a full or part time basis for the enterprise. The secret of *La Somma's* economic success is thus the mobilisation of the extended family's *social capital* (i.e., those immaterial assets like trust, respect, friendship and love that make all members of the Bevilacqua family behave in a cooperative manner to earn a livelihood and achieve security and welfare). Social capi-

tal is particularly intense within the network of primary kinship linkages among grandparents, parents, sons, siblings, cognates, cousin and nephews that live the under the same roof. However, the Bevilacqua rely also on a wider social network including distant relatives, step-parents and neighbors, who were born and/or are settled in the surrounding villages. Many minor economic transactions occur in this broader social arena, most of which focus on the making of sociability through the reciprocal exchange of surplus use value (labor, natural resources, machinery), rather than on the production of exchange value for profit. For instance, during the 2003 summer drought, when the municipality forbade the use of the aqueduct for watering animals, Agostino exchanged firewood and manure for the water that he had to carry daily from a private source owned by a distant relative.

This kind of arrangement reproduces in a hybrid and modernised fashion the ancient socio-economic structure of Central Italy peasant villages. It plays a major role not only in enhancing access to unevenly distributed natural resources, but also in preventing conflicts and managing those that can not be avoided. Gossips (which are abundant in *La Somma*) are an important component of this system, as they often prevent "bad things" (such as animals getting "lost", over-exploitation of forest resources and pasture unlicensed building, drunkenness, forest fires, unsafe driving and violence) from happening. Gossips also maintain and disperse knowledge of what is happening on the territory allowing for the limitation of encroachment by "dangerous" outsiders (such as rural real estate speculators and tour operators). For instance, nobody in the area would sell

As it was for the family farmland of ancient Umbrian peasants, *La Somma* has, for its contemporary owners, turned into a repository of symbolic capital.

property or clear forest without having informally consulted with relatives and neighbors involved in this social network.

To work, social capital needs to be internalised within a system of values, attitudes and patterns of behavior. The way in which children are reared in *La Somma* illustrates this process. As mentioned above Agostino's and Giancarlo's sons and daughters have precise responsibilities in the family enterprise according to their age, working capacity and interest and are entitled to a share of the income generated by that particular activity. Task allocation follows both seniority and gender lines. Elder brothers and sisters are responsible for more time-intensive and remunerative jobs and supervise the work of their younger siblings. All are expected to work accurately and efficiently, and to assist others when their tasks prove more time consuming or difficult than expected. Everybody should be ready to mobilise in case of emergency. Moreover, working should not interfere too much with children and teenagers school duties. As a



Figure 4. Horse-trekking to Spoleto (Courtesy Patrizio Warren)

result, kids do not have much time to play at *La Somma* and chances for teenagers to fool around are rather limited. However, this is not a coercive system. Boys

and girls are proud to contribute to the family enterprise, and shouting and punishment are rarely needed.

This practice highlights and promotes values such as responsibility, accountability, and cooperation among family members and a positive attitude towards life. Children grow up knowing that family will always assist them and feeling a strong ownership of the family enterprise. For them *La Somma* is not just "daddy's business": it is their future. Still, each one is left relatively free to follow his or her vocation: Agostino's elder son Andrea, who was not very good at school, has become a well known horse jumping specialist and instructor, with a record of several national trophies. On the other hand, Cristina, Giancarlo's elder daughter, received a diploma as a pony instructor and went to the U.K. to learn English in order to deal with the increasing number of foreign tourists that spend a few days in *La Somma*. Also for these young adults the family enterprise is thus something more than a job. It is the ground where their personal expectations and dreams can grow in harmony with a solid network of primary social relationships. As the family farmland for ancient Umbrian peasants, *La Somma* has, for them, turned into a repository of *symbolic capital*.

But how does *La Somma* impact on the local natural environment? And how do its neo-peasant owners look at conservation issues? To answer these questions, it must be stressed that the management of the 35 hectares of forest owned by the family follows Zi' Bruno's forestry practice described above. There is no over-cutting of trees, no over-grazing, no over-hunting and no over collection of mushrooms. As witnessed by frequent encounters with wild mammals (such as porcupine, fox, badger, hare

La Somma's negative environmental impact is thus quite limited.

On the other hand, the enterprise generates several positive environmental externalities.

and wild boar), biodiversity is still rich in the property. Moreover, farm animals are bred primarily with local products and grazing land is fertilised with their dung. Chemical pollution is thus almost zero. For sure, building the horse-riding center on the top of the hill has entailed deforesting a critical area. One may perceive the whole compound as having a negative impact on the landscape (at least until the oak-trees that have been re-planted on the excavated earth will be fully grown). But the deforested surface is less the 1/30 of the whole property.

La Somma's negative environmental impact is thus quite limited. On the other hand, the enterprise generates several positive environmental externalities. Importance of landscape and forest resources makes all members of the Bevilacqua family very sensitive to environmental hazards and ready to intervene in case of emergency. During the 2003 summer drought, a fire on the side of the asphalt road, probably triggered by a lightened cigarette coil thrown out from a car window, threatened the edges of the forest. Agostino, who was around on horseback, alerted the Forestry Guard Fire Service with his mobile phone, but the operator answered that all the units were already busy with other fires and that they would not be able to intervene immediately. Agostino spurred his horse towards the compound. In less than 30 minutes the big tank cart utilised to carry water for horses was filled and harnessed to a tractor. All the available extinguishers were collected and a group of 15 volunteers assembled. It was a windy day and when the team reached the place the fire was moving rapidly towards the forest. Notwithstanding, the intervention proved timely and effective enough to prevent a major disaster.

This accident clearly shows the role played by *La Somma* people in forest conservation. Yet the contribution of the enterprise to for-

est ecology goes far beyond emergency situations. Selective cutting of trees for firewood and posts allows more sunlight to penetrate the forest and nurture the undergrowth. It also facilitates development of bigger and healthier tree specimens and slows down the propagation of pests and diseases. Partial replacement of the endemic small-durmast coverage with chestnut plantations has facilitated the development of glades where weed and mushroom species grow and provides an important source of food for many wild local and birds. "Shadow grazing" of cattle and horses helps to fertilise the forest. Also wild bore hunting contributes to the health of the ecosystem by maintaining the population of this prolific (and intrusive) species within the forest's carrying capacity limits.

Agostino, Giancarlo and the other member of the Bevilacqua family are aware and proud of their role of forest managers. They are conscious of having learned most of their relevant skills from Nonno Pietro, Zi' Bruno and the other elders of Acqualacastagna e Montebibbico. However they don't see this knowledge as static. They are instead open to any innovation that might prove effective without entailing too much risk.

People in La Somma perceive the rhetoric of conservation as nonsense. For them nature is capital that has to be nurtured and cultivated, so that it will continue to provide benefits and profits

Despite their deep care for the place, nobody at *La Somma* likes the protectionist landscape, forest and wildlife conservation rhetoric that inspires national and regional land use laws and regulations. Indeed for Agostino and Giancarlo the very concept of "conservation" is nonsense: they firmly believe that land, plants and animals are there to be wisely used by men and women in their struggle for a wealthy and peaceful life. They stress that rural people whose livelihoods depend directly on these assets,

have no reason to over-exploit or destroy the natural environment. On the contrary, nature is for them a capital that has to be nurtured and cultivated, so that it will continue to provide dividends to its owner. This is what Nonno Pietro and Zi' Bruno have done, this is what is happening in *La Somma* and this is how their sons and daughters are being taught to behave in the future.

Of course, the two brothers know very well that in Italy and in Umbria there are places where deforestation and agrochemical pollution have led to environmental disasters; where speculative parceling has transformed the countryside into fields of second-home condominiums; and where unscrupulous entrepreneurs have taken advantage of agro-tourism incentives and facilities to build five star rural hotels with tennis courts and swimming pools. Yet they can not understand why the conservationist regulations which have been easily bypassed in those instances continue to be applied so rigorously and blindly to them; why they had to pass through long and expensive bureaucratic procedures to get the permission to establish their own house and enterprise on their own land? Why they should not be free to build a new stable for horses or a wooden cottage to host tourists, if this is needed? Why they are forbidden to open a new track to extract firewood from a poorly accessible and under-exploited forest area?

As nobody in the town is able to provide convincing answers to these questions Agostino and Giancarlo are very suspicious about environmental laws and regulations. In particular, they are very resistant to the local Mountain Community project of establishing a Regional Park in the area, which they see as an additional source of troubles for their enterprise. They believe that, at the end of the day, talks about forest and landscape conservation are just excuses to

extract taxes and bribes from rural people. They feel that there is not much they can do about it, except for keeping good personal relationships with the officers in charge. This is why regional and municipality officers always find at *La Somma* a coffee on the bar desk, a table in the restaurant, a flat in the guesthouse or a good horse to ride. As their peasant ancestors did with landlords and tax collectors, Agostino and Giancarlo use the "weapons of the weak" to protect against the conservation bureaucracy that hinders them with specious rules and interferes with their effort to improve their enterprise.

What lessons can be drawn from this narrative on the interplay between history, culture and forest conservation in contemporary Umbrian upland? First, it is clear that *La Somma* is a successful attempt to re-new the forest-based livelihood strategy of Acqualacastagna and Montebibbico peasants, threatened by the major economic and social change that took place in the region after World War II. From an historical perspective, introduction of horseback trekking and agro-tourism in the rural household economy is equivalent to other major adjustments that have occurred in the past, such as chestnut semi-cultivation



Figure 5. In the durmast forest (Courtesy Patrizio Warren)

(which was adopted at the beginning of the XIX century). This capacity to adapt exploitation of natural capital to changing historical conditions is evidence of the dynamic and evolutionary character of Umbrian peasant livelihood systems.

The story also suggests that the success of *La Somma* as an enterprise depends not only on the wise use of natural capital, but also on mobilisation of the intangible capital assets embedded in local social and cultural background. Most of the know-how that the Bevilacqua family is using for managing forest and breed animals has been inherited from the previous generations (and is being transmitted to the new ones). Extended family social capital plays a pivotal role in the economy of enterprise. Persisting "peasantish" values, attitudes and pattern of behavior continue to be essential factors in ensuring the cohesion and loyalty among household members needed to make the new business work. Notwithstanding the adoption of new productive technologies and a pattern of consumption largely influenced by the industrial society in which their lives take place, the Bevilacqua's livelihoods are largely based on the same assets that allowed traditional Umbrian peasants to survive and prosper. Their new "ruralness", is indeed a syncretic construct melding tradition with innovation in a new synthesis.

Sustainable use of forest resources is one of the primary elements of continuity between traditional peasant farming and the new enterprise. Like Zi' Bruno and Nonno Pietro, the new generations of Bevilacqua depend so heavily on forest and landscape that there is no point for them to abuse these resources. Their interest is rather to nurture and protect an environment that attracts horse-trekkers and tourists, feed horses, generate additional income and supply their table with tasty foods. As owners of their ancestral land, the Bevilacqua believe them-

selves to be the only stakeholders fully entitled and really competent to make sound forest management decisions. They perceive conservation laws and regulation as a disturbing, useless and expensive paper work. The paradox is that these laws and regulations have been designed precisely to oblige and motivate people to do in the name of environmental conservation what the Bevilacqua are already doing with the primary aims of enhancing their wealth, improving the quality of their life and reproducing their cultural identity.

As policy does matter, some questions for national and regional conservation policy-makers arise from these considerations: how can conflicts between land management bureaucracy and new rural livelihoods, such as that illustrated in this paper, be dealt with? Can collaborative relationships among authorities, small entrepreneurs and other actors be established and nurtured in the context of rural central Italy? Is it possible to devolve natural resource management responsibilities to competent rural (or neo-rural) people, while maintaining a strict (or even stricter) control over speculative forms of forest and landscape exploitation? How can sound collaborative management processes, based on the 'conservation-by-use principle' be promoted in this social environment? The experience of the Bevilacqua family suggests that there is plenty of room to find workable answers to these questions.

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Ideas, history and continuity in the practice of power— the case of wildlife management in Zambia

Ilyssa Manspeizer

Abstract: This paper contends that there is continuity between those ideas that underpin both the imposition of exclusionary conservation during colonial times in Northern Rhodesia and the creation of community-based natural resource management programs in independent Zambia. These ideas are based upon a “grammar of difference” that distinguished between Africans and Europeans in colonial times, but today distinguishes among rural Africans and African state authorities, NGOs and non-African donors. Marks of distinction in both cases involve the assumption that rural Africans are closely connected to nature and, as such, unable to make rational decisions on their own behalf. This justifies continued external decision-making on their behalf and a failure to devolve real authority to rural Zambians.

Zambia is an area with a rich pre-colonial history related to long distance trade, the development and disappearance of kingdoms, and innovations in land management and artistic technologies. While Portuguese, Arab and Swahili traders had operated in the area for hundreds of years, trading in slaves and wildlife products, Christian missionaries began arriving on a permanent basis in the 1870s, and the precursor to British colonial administration arrived only in the last decade of the 19th century. The British South Africa Company (BSAC), a British chartered company, ruled what became Northern Rhodesia until 1924, when British colonial rule was instated.

This grammar of difference underlies certain ideas that have long informed European-African relations – a paternalistic belief that Africans could not make rational decisions on their own behalf and a deep-seated belief that Africans were somehow rooted in nature.

Separation and differentiation were an integral part of British colonial rule. Therefore, British colonialists looked at Africans as a reversal of their own “Europeanness,” and ultimately everything that was not European,¹ and often everything that was

not human.² Europeans located their own past in Africa’s present. Achebe³ believes that Europeans have a “need” to “set Africa up as a foil to Europe” so that they can “cast a backward glance periodically at Africa trapped in primordial barbarity” and “say with faith and feeling: there go I but for the grace of God.” Because of these feared connections, differences needed to be constantly maintained and defined, leading to the continual “crafting” of a “grammar of difference” to prove European claims of superiority⁴ and justify a wide range of mistreatment, from slavery to colonialism to expulsion from protected areas.

This grammar of difference underlies certain ideas that have long informed European-African relations – a paternalistic belief that Africans could not make rational decisions on their own behalf and a deep-seated belief that Africans were somehow rooted in nature. Both of these ideas continue to inform how CBNRM is practiced in Zambia today.⁵ British colonialists saw themselves as responsible for bringing civi-

If Africans, because of their close connections to nature, could not make rational decisions about resource management and use, the colonial authorities would have to make these decisions on their behalf

sation to their colonies, an idea that was set out in the Pax Britannica. This “evangelical imperialism” enabled the British to establish not “a world empire in the bad Napoleonic sense, but a Moral Empire of loftier intent.”⁶ Africans were imagined as child-like, in contradistinction to the attributes that defined a ‘proper’ Victorian British (male) adult – having “self-control, virtuous character, and rational mind,” while Africans, like children were “ignorant, impulsive, irresponsible, and without powers of reason.”⁷ Seeing Africans as childlike helped justify the paternalistic attitude adopted by many later colonial authorities and settlers who denied that Africans had the ability to make decisions on their own behalves. However, it is only when considering these attitudes in relation to others, like the assumed African connection to nature, that we can clearly see how Africans were (and continue to be) effectively excluded from natural resources.

Early in the colonial period African hunters were often, although by no means always, idealised, as, not only wonderful hunters, but as essentially primitive enough to be part of nature. As early as the sixteenth century the idea was developed that the African was the ‘natural man’, living wild in his ‘untamed nature’;⁸ by the nineteenth century the ‘savage’ African was a well established topos in European culture.⁹ The view that Africans, unlike Europeans (at least of a certain class), were unable to separate themselves from nature, helped create the idealised view of African hunting held by many early settlers and hunters. Owen Letcher, an early European settler and hunter, who had arrived in South Africa in 1904 and ultimately worked his way north to the Luangwa Valley (eastern Zambia) wrote with consummate

praise of the “exceptionally clever hunters” he found there.¹⁰ However, the respect Letcher holds for Bemba hunting skills is not born out of an admiration for African hard work in becoming skillful hunters, but rather an assumption that all Africans are innately good hunters.

*“It is not to be wondered at that the average Central African native is a hunter of consummate skill and ability. There is a hereditary instinct bred in him to hunt, a legacy of many centuries of forefathers.”*¹¹ Thus just as a lion must come to the world “pre-packaged” with outstanding hunting skills, so too (it was believed) did Africans – so inherently part of nature that they, unlike the colonial powers, could not distinguish between themselves and the natural world.

Because Africans were regarded as so intrinsically part of nature, British colonialists justified their exclusion from a romanticised and sanitised nature because as “savages” they could never intellectualise and appreciate the beauty of this nature.¹² Thus, seeing Africans as inherently a part of nature, combined with the paternalistic attitudes of the colonial enterprise, helped to justify the removal of Africans from what would ultimately become protected areas. If Africans, because of their close connections to nature, could not make rational decisions about resource management and use, the colonial authorities would have to make these decisions on their behalf.

Despite colonial contentions to the contrary, the geographic area that is today known as Zambia has long provided not only an important wildlife habitat, but also opportunities for people to manage the wildlife resources. Although the primacy of wildlife to these inhabitants seems to vary across both time and space, wildlife, fish, and wild plants have always been important nutritional and economic supplements to local agricultural diets and incomes,¹³ with trade in wildlife resources being traced to the 5th

Both CBNRM as practiced in independent Zambia today and the participatory rhetoric of the past are based upon a grammar of difference that infantilises the ‘native’ [...] and find in this a justification to remove decision making authority from them

ate themselves from nature, helped create the idealised view of African hunting held by many early settlers and hunters. Owen Letcher, an early European settler and hunter, who had arrived in South Africa in 1904 and ultimately worked his way north to the Luangwa Valley (eastern Zambia) wrote with consummate

century AD. Although Derricourt¹⁴ claims that the importance of wildlife resources in rural areas fell off with the imposition of colonial wildlife regulations, wildlife resources are still widely consumed and traded throughout Zambia today.¹⁵ However, some significant changes towards wildlife access occurred during the colonial period. Although customary law had long controlled African access to wildlife resources,¹⁶ it was not until colonial rule that this access was conceived of within a legal framework. As colonial laws began to be instated, one of the primary effects on many Africans was the attempt to eliminate access to wildlife and other natural resources by removing them from what would become protected areas, disallowing Africans to own firearms, or policing rural areas to ensure compliance.¹⁷ While justified as necessary conservation steps, African alienation from wildlife resources was as often a way for colonial authorities to protect European hunting access¹⁸ and control rural populations.¹⁹

When the British took over colonial rule they introduced a system of indirect rule. Within this system, "Native Authorities" made up of Chiefs and their Councils, were charged with spreading colonial rule throughout Northern Rhodesia. Despite paternalistic claims, British indirect rule was more about controlling large territories on a tight budget than about allowing the "native" to "stand on his own feet"²⁰ or finding locally appropriate administrative structures.²¹ Once established, conservation regulations and protected areas were ostensibly managed through these Native Authorities, in what some have claimed was a precursor to later CBNRM efforts. Astle, a retired agriculture (1959-1965) and wildlife officer (1965-73), believes that the "Provincial Administration placed great importance on involving local people."²² According to him²³ native authorities were consulted on all developments, received a percentage of the revenues generated from the protected area, from the

Game licenses they issued, and from fines paid for breaking Game Laws, but they were also expected to monitor illegal use of wildlife. However, this level of "involvement," is at best superficial. In the end, these concerns often did not wind up benefiting "native inhabitants" in any considerable way,²⁴ since district commissioners regularly overruled native authorities, denying them real decision making authority.²⁵ While clearly not an ideal form of participatory conservation, "empowerment" as it is used today, "seems oddly like the operation of 'Indirect Rule' in British colonial Africa."²⁶ Thus, how CBNRM is practiced in independent Zambia today may not be that far removed from the participatory rhetoric of the past. Both are based upon a grammar of difference that infantilises the 'native'. Both contend that 'natives' have a special connection to nature and simultaneously praise this connection, while using it as justification to remove decision making authority from those who live closest to the natural resources.

Zambian independence

The British ruled Northern Rhodesia until the country was briefly federated with Southern Rhodesia and Nyasaland (Malawi) in 1953. Independence was achieved in 1964. Almost since the beginning of independence, the Zambian economy has been troubled,²⁷ opening the door for significant donor involvement in the national decision-making process.²⁸ This involvement has come in the form of a neo-liberal democracy that demands good governance and accountability from African states,²⁹ demanding African leaders continuously prove they are not corrupt, inept or child-like, thus reproducing the grammar of difference that had marked European-African relations during colonial times.

Wildlife conservation and utilisation in independent Zambia

In Zambian conservation, there has been a

sea change in official conservation policy over the past 20 years as the Zambian Wildlife Authority (ZAWA) moved from officially excluding rural people from conservation areas to officially including them as both beneficiaries and managers in local conservation efforts.³⁰ The Zambian Wildlife Act of 1998 codified much of this shift. This latest wildlife legislation not only created a semi-autonomous Zambia Wildlife Authority, but also legislated the move from protectionist conservation to community-based natural resource management. While communities had in fact been part of wildlife

accomplish.

“Evidence of traditional values returning to rural areas may be renewed story telling and folklore about wildlife, especially by the elders in the villages. Younger people may seek the company of village scouts and aspire to be scouts themselves — as much, perhaps, as village hunters once were role models. Animal products may reassume medicinal or symbolic values. Should such traditional attitudes and values return with increased confidence and willingness among residents to share their lands with wildlife, the prospects for African conservation are bright.”³¹

The excitement and sincerity that suffused these early attempts at CBNRM is palpable; while at the same time it carries with it bitter echoes of the past. One

can almost hear the, “occasional happy laugh” of “the children of nature” as described by Wilson³² in 1964 in his description of Zambians on the eve of independence. These images continue to draw upon ideas about rural Africans that see “them” as inseparable from nature and stuck in history, a perspective that denies any sort of pre-colonial or colonial historical perspective. Although (perhaps) intended to emancipate, these notions have achieved similar results to those held earlier since a-historical and naturalised ideas about Africans have consistently infantilised “the other” in the minds of the more powerful. In the past these ideas have justified slavery, colonialism and the exclusion of Africans from protected areas. Today, they continue to inform the paternalistic approach of CBNRM in Zambia, denying rural Zambians real control over the decision-making process.

Once the members of the community resource board are elected they are required to follow a sustained training programme [...] no comparable programs exist for donors, the safari industry or state authorities.

CBNRM in Zambia is based upon the poten-



Figure 1. Zambian tourists look out over Victoria Falls (Courtesy Brian Cohen).

conservation in Zambia in an ad hoc way for a long time, through programs like ADMAD (Administrative Management Design) and LIRD/SLAMU (Luangwa Integrated Rural Development Programme/ South Luangwa Management Unit), the 1998 Act institutionalised community-based conservation as a management principle for all land designated as Game Management Areas (GMAs) in Zambia.

I would like to argue, however, that from the start community-based conservation (CBC) has been based strongly upon a grammar of difference that draws upon the construction of the “natural African.” This is evident in an early prediction of what CBC programs would supposedly be able to

tial for partnership among rural communities, tour operators, and ZAWA to earn significant revenue from a well-managed wildlife estate – a formula that closely follows that laid out by donors supporting a neo-liberal development agenda. For donors, partnerships ideally take the form proposed by the World Bank in their 1998-1999 World Development Report, of a joint action between the local state, civil society, and businesses.³³ This formula was followed closely in the Zambia Wildlife Act, where the framework for CBNRM was predicated upon building a cooperative relationship between the hunting safari industry (businesses) and representatives of local communities (civil society) that lived in or near to Game Management Areas under the guidance of the Zambia Wildlife Authority. The Zambia Wildlife Act of 1998 calls for a locally democratically elected Community Resource Board (CRB), acting on behalf of the local community, to “negotiate, in conjunction with the Authority [ZAWA], co-management agreements with hunting outfitters and photographic tour operators.”³⁴ These co-management agreements are intended to provide hunting outfitters access to a predetermined quota of wildlife found within the GMA in exchange for the CRB receiving a portion of the license fees paid by hunting clientele to hunt wildlife in the GMA. In return, the CRB will use this money to develop the local area and to ensure that local residents do not participate in illegal resource use. The rhetoric continues that, if successful co-management agreements are negotiated in the country’s GMAs, not only could ZAWA direct its limited resources towards managing and protecting its vast National Park system, but local communities would benefit economically and travel down the golden path to development.³⁵

Certainly rhetoric does not always concur with reality, and these partnerships are not based upon equal treatment. This is evidenced by The African College for CBNRM and the role it plays in providing skills train-

ing to rural community members. The college trains 700 community residents a year, provides 15 accredited courses, and supports an extension staff to reinforce these skills (Lewis 1999:1). Its primary mission is “to provide communities with skills needed to fully participate in, contribute to, and benefit from” (Lewis 1999:3) the local CBNRM programme. Once the CRB are elected, “a sustained training programme is required to enable the CRB to meet all of its legal obligations to ZAWA” (ADMADE Sustainability Project 1999:5) through training programs that focus upon fiscal accountability, conducting rural needs assessments, conducting self-surveillance for wildlife utilisation, and fulfilling their promise to the rural community, ZAWA, and the safari industry. There are no comparable training programs for donors, the safari industry or state authorities. However, because rural Zambians still contend with the notion that they are connected to nature in a way that makes them incapable of “rational” decision-making, they are compelled to undergo training and allow outsiders to make important decisions about local resources. Thus, the burden of a workable CBNRM is placed firmly on rural communities because they must constantly shoulder the burden of difference they have inherited from previous relations with outsiders.

As a result, CBNRM in Zambia does not empower rural Zambians to make decisions about the wildlife resources that are appropriate to their circumstances. Rather it reinforces a grammar of difference between rural Zambians and other groups interested in wildlife conservation and utilisation in Zambia. In fact, the rhetoric of participation

the boundaries of any negotiations with rural residents were set long before CBNRM programs were initiated – benefits were to come in the form of economic development, not in rights of access to the wildlife resource or in any other way that rural groups might decide as more appropriate or meaningful

found in the Zambia Wildlife Act obscures how “participation” in fact occurs – first, people become accomplices to a process in which decisions have already been made; second, the role of the agency that made these decisions (ZAWA and other state and donor authorities) is obscured, making it appear that decisions are made by “participants” (rural communities through the CRBs); and third, those making the decisions are ultimately concerned with reducing the cost of the project, not with addressing social (and in this case conservation) issues – which are viewed as only raising obstacles.³⁶

Despite CBNRM proponents’ declarations that CBNRM officials do “not dictate the methods used to achieve reconciliation between wildlife and rural residents’ interests,”³⁷ this is exactly what they have done. The failure to devolve real authority over wildlife to rural residents is a problem that has been noted throughout the world. As in many CBNRM programs, local community involvement is often at best superficial and does not actually empower diverse communities to control either their own resources or their own futures, and it is in part this lack of real decision-making ability that has kept CBNRM programs from working.³⁸ The failure to devolve real authority in the Zambian case is evidenced in, for example, the rural community’s inability to freely choose representatives without restrictions;³⁹ to adequately influence the safari tender process; to influence quota setting exercises; to opt out of tourism as the main source of community income; and to secure the funds that are due (and long overdue) them.⁴⁰ Thus, CBNRM proponents have both created the structure that “promotes” rural participation and restricts it by dictating its rules. In Zambia, CBNRM programs conceive of wildlife as an economic resource to be exploited by tourists⁴¹ (and consumptive tourism is the preferred method). Thus the boundaries of any negotiations with rural

residents were set long before CBNRM programs were initiated – benefits were to come in the form of economic development, not in rights of access to the wildlife resource or in any other way that rural groups might decide as more appropriate or meaningful.⁴² Electoral/ representative democracy— the donors’ favorite vehicle for incorporation— is the current governance mechanism deemed appropriate for CBNRM in Zambia. Finally, community members are forced to police and monitor their own activities in order to achieve some external notion of “civility.”

Conclusion

If rural dwellers have not achieved any real devolution of authority to make decisions over their lives, we need to question whether or not CBNRM as it is practiced in Zambia today is any radical departure from claims of participation by colonial authorities. I believe they are in fact linked, not only by a failure to devolve real authority, but by shared ideas that have informed how each was created and devised, and the form they took once created. Initially both CBNRM and colonial conservation were



Figure 2. Through the eyes of a tourist (*Courtesy Brian Cohen*).

based upon ideals of a romantic sense of African connections to nature. In the 1980s,

CBNRM was seen as a “more African” way of conserving wildlife,⁴³ while colonial policies were built upon the assurance that Africans were inherently bound to nature, primitive and savage. In the realm of colonial conservation this meant that Africans, despite their close connections to nature had to be separated out from nature because they were not capable of rationally managing the resource base. Within the sphere of CBNRM in Zambia today, these ideas exist in a less exaggerated form, but nonetheless with serious implications for rural Zambians, justifying the role of CBNRM proponents as “trustees” for rural Africans, who cannot be trusted to honestly manage either the natural resources or the financial benefits that come from these resources. These organisations have adopted the role of caretaker, acting on behalf of an infantilised rural community until, through adequate “sensitisation” and training, they become fiscally responsible, hold their democratically elected leaders accountable, and ultimately will be allowed by more powerful actors to manage what they have been told are their own resources.

The strengthening of neo-liberal policies in wildlife conservation has seen a rebirth of

traits that include where people reside, their ethnicity, nationality, class, or education level [...] are understood as representing a group that is either naïve or thoughtful, savage or civilised, traditional or modern, and natural or cultured.

the paternalistic relations that guided wildlife conservation in colonial times. It is this similarity of devolving responsibility, rather than authority, which most clearly connects Zambian CBNRM directly to that of the Northern Rhodesian Colonial authorities. The commonalities between colonial and postcolonial Africa are important,⁴⁴ although sometimes painful, to point out. This is per-

haps an unpopular view because it suggests post-colonial states, donors, and NGOs are responsible for some of the problems that continue to befall developing nations. As Gledhill⁴⁵ claims, the ills of the world cannot

be explained simply as a colonial legacy. Asymmetries of power continue, and those in power today (in both North and South) are responsible for their actions. As anthropologists and conservationists, we may wish to distinguish and remove ourselves from our colonial ancestors; but we must not do that by “silencing” history.⁴⁶ Rather we must be open to what our search reveals.

Some social scientists and historians who have prodded the past in this way are coming up with results that may disturb our sense of a historical break in practice. For example, Elliot⁴⁷ found that despite significant policy changes, there has been substantial continuity in soil conservation practice between colonial Rhodesia and Independent Zimbabwe. While Neumann,⁴⁸ almost apologetically, presents his findings that because postcolonial governments defended their actions according to the greater “public good” of “national development,... the postcolonial state has implemented wildlife conservation policies using means that were shunned as politically inexpedient by colonial governors and secretaries of state for the colonies.” As a result there has been more violence, for example, against people living in and around Tanzania’s protected areas during the post-colonial era, than prior to independence. Perhaps Neumann was concerned that he would be taken to task for supposedly sympathizing with the colonisers. This is the case with Grove⁴⁹ whose extensive examination of the role colonial officers played in creating a conservation ethic, has been criticised, not because it is wrong, but rather because it appears sympathetic to the colonisers.⁵⁰ As a result, we must be careful of our own sense of censorship when we reach unpopular conclusions. These commonalities are important to remember, not because they elevate colonialists or denigrate post-colonialists, but rather, because of what this tells us about the how certain ideas may be present and manipulated by

both the powerful and the weak through time.

I am not here necessarily laying claims of racism at the feet of donor, NGO and state officials. Rather, conceptions about race and difference change over time, and must be examined historically as malleable factors of life.⁵¹ Even though there is undoubtedly continuity in the ideas and the structure that the postcolonial has inherited from the colonial, these ideas are used and manipulated in ways specific to the postcolonial condition. Thus, although these ideas reappear in independent Zambia, they are not simply spewed out as repetitive verse, but in ways that are relevant to the logic of the time and place in which they are used. Thus, race – as a measure of physical difference – may play less of a role in independent Zambia than it did in colonial Northern Rhodesia. However, the category of the “other” continues to be actively employed to distinguish between different groups. As a result, actors within the wildlife sector still maintain a grammar of difference about other groups according to a bundling of traits that may include physical differences, but are more likely to center upon where people reside, their ethnicity, nationality, class, or education level. Each of these traits is then understood as representing a group that is either naïve or thoughtful, savage or civilised, traditional or modern, and natural or cultured. This is evident in the myriad relations between donors, the state, rural actors, and the safari industry and how they continue to approach wildlife conservation and utilisation in Zambia.

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Notes

- 1 Hammond and Jablow, 1977:16; Mudimbe, 1994; Pieterse, 1992:30-39.
- 2 Hammond and Jablow, 1977:23.
- 3 Achebe, 1978:2,13.
- 4 Cooper and Stoler, 1997:7.
- 5 My conclusions should in no way reflect upon the hard work and dedication of CBNRM proponents in Zambia, many of whom I respect greatly. On the contrary, it is submitted in the hope of giving us pause for thought about the direction, aims and future of CBNRM in Zambia.
- 6 James Morris quoted in Hochschild, 1999:212.
- 7 Hammond and Jablow, 1977:64-65.
- 8 Mudimbe, 1994:4.
- 9 Neumann, 1998:128-129; Pieterse, 1992:34f.
- 10 Letcher, 1987:244.
- 11 Letcher, 1987:255 italics added.
- 12 Neumann, 1998:108.
- 13 Derricourt, 1985:126.
- 14 Derricourt, 1985:126.
- 15 Gibson, 1999; Manspeizer, 2004; Marks, 1984.
- 16 Marks, 1976; Morris, 2000.
- 17 Anderson and Grove, 1987; Marks, 1984.
- 18 MacKenzie, 1988.
- 19 Neumann, 2001.
- 20 Iliffe, 1979:326, quoted in Neumann 1998.
- 21 Bratton, 1980 for northeast Zambia; Crehan, 1997 for northern Zambia.
- 22 Astle, 1999:52.
- 23 Astle, 1999:52.
- 24 Neumann, 1998:104-105.
- 25 Virmani, 1989.
- 26 James, 1999:14.
- 27 Saasa and Carlsson, 1996.
- 28 Abrahamsen, 2000.
- 29 Townsend, Porter, and Mawdsley, 2002:83.
- 30 Astle, 1999; Gibson, 1999; Lewis and Carter, 1993; Marks, 1991.
- 31 Lewis, 1993:97.
- 32 Wilson, 1964.
- 33 Townsend, Porter, and Mawdsley, 2002:833.
- 34 Zambia Wildlife Act, 1998.
- 35 Zambia Wildlife Act, 1998.
- 36 Ferradas, 1998:21.
- 37 Lewis and Carter, 1993:87.
- 38 Agrawal and Gibson, 2001; Ghimire and Pimbert, 1997.
- 39 CRB members are restricted to those above a certain age with a minimum education requirement, so that CRB members will be both elder representatives and are able to read and write in English.
- 40 Manspeizer, 2004.
- 41 ADMADE Sustainability Project, 1999:5.
- 42 Garland, 1999:80.
- 43 Lewis and Carter, 1993.
- 44 Ranger, 1996:273.
- 45 Gledhill, 1994:70.
- 46 Trouillot, 1995.
- 47 Elliot, 1991.
- 48 Neumann, 2001:322-323.
- 49 Grove, 1995.
- 50 Daniels, 1997.
- 51 Wade, 2002.

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The cultural politics of conservation encounters in the Maya biosphere reserve, Guatemala

Juanita Sundberg

Summary. Neo-liberal re-structuring of economies and the contraction of the state has given non-governmental organisations (NGOs) and other international actors a great deal of say over the direction of conservation priorities and agendas. Consequently, NGOs have come to play a powerful role in shaping the *cultural politics* of conservation, in terms of defining the specific frameworks through which nature, environmental degradation, and appropriate human land relations are envisioned and acted upon. One of the most important ways in which NGOs shape the cultural politics of conservation is through the production of knowledge, in the form of technical studies, research reports, and project proposals. The knowledge produced then becomes the foundation for policy design and management plans, which in turn directly impact the lives of local groups. How do local actors, as individuals and collectives, engage with and mediate the discourses and practices of conservation? In this paper, I explore this question with a case study analysis of the encounters between United States-based environmental NGOs and local people in the Maya biosphere reserve, a protected area in Guatemala's northern lowlands. In particular, I examine how two different social groups negotiate, contest, and appropriate the discourses and practices of conservation NGOs. As I illustrate, the ways in which local actors are framed within NGO discourses have important implications for whether or not they are included in the reserve's decision-making processes, with uncertain consequences for those groups whose environmental practices are deemed inappropriate to the goals of conservation.

The last twenty years have witnessed a boom in conservation, as evidenced by the increased number of protected areas as well as the emergence of national environmental state and non-governmental organisations.¹ The expanding reach of international conservation institutions drives this boom, ranging from the United Nations' Man and the Biosphere Programme to US based environmental non-governmental organisations (NGOs) like the World Conservation Society and Conservation International. Many newly created protected areas are directly or indirectly funded and/or managed by such NGOs.

In Latin American countries, neo-liberal re-structuring of economies and the contraction of the state has given NGOs and other international actors a great deal of say over the direction of conservation priorities and agendas.² Consequently, NGOs have come to play a powerful role in shaping the *cul-*

tural politics of conservation, in terms of defining the specific frameworks through which nature, environmental degradation, and appropriate human land relations are envisioned and acted upon.³

One of the most important ways in which NGOs shape the cultural politics of conservation is through the production of knowledge, in the form of technical studies, research reports, and project proposals. The knowledge produced then becomes the foundation for policy design and management plans, which in turn directly impact the lives of local groups. How do local actors, as individuals and collectives, engage with and mediate the discourses and practices of conservation? In this paper, I explore this question with a case study analysis of the encounters between United

One of the most important ways in which NGOs shape the cultural politics of conservation is through the production of knowledge, in the form of technical studies, research reports, and project proposals

States-based environmental NGOs and local people in the Maya biosphere reserve, a protected area in Guatemala's northern lowlands. In particular, I examine how two different social groups negotiate, contest, and appropriate the discourses and practices of conservation NGOs. As I illustrate, the ways in which local actors are framed within NGO discourses have important implications for whether or not they are included in the reserve's decision-making circles.

My analysis draws from my on-going fieldwork in the Maya biosphere reserve, which began in 1993.⁴ In this paper, I specifically address the initial years of the United States Agency for International Development's Maya Biosphere Project, which was the most important source of funding in the reserve between 1990 and 2001. The project contracted U.S.-based NGOs to imple-

ment conservation and sustainable development projects. Thus, NGOs played a very powerful role in constituting discourses, policies, and practices, especially in the first six years of the project. My goal in analyzing the cultural politics of conservation during this period in the reserve's history is to contribute to a broader understanding of the uneven implications of conservation projects in the lives of local actors. Such an understanding is critical to the development of more equitable conservation policies.

Cultural Politics: Approach & Methodology

In focusing on the *cultural politics* of conservation, I treat culture and, by extension nature as on-going sites of political struggle. In other words, cultural and environmental formations are seen as effects of social relations, rather than pre-given, commonsensical, or natural ways of being and thinking. Thus, I begin my analysis with the assumption that conceptions of resource management are necessarily culturally defined; they emerge within historically and geographically specific conditions. As Northern-based environmental organisations expand their reach, they employ culturally informed visions of nature and human land relations to make sense of the causes of and solutions for environmental degradation. As such, they inevitably privilege particular ways of seeing and engaging with nature, while marginalizing or silencing others.

In conservation projects, NGOs naturalise their visions through the production of knowledge, or empirical research describing the biophysical environment and human land relations. Such studies are taken to be objective, unbiased and therefore true representations of the world *as it really is*.⁵ The specific sets of social relations that empower NGOs in Latin America, in conjunction with their claims to technical expertise, impartiality,

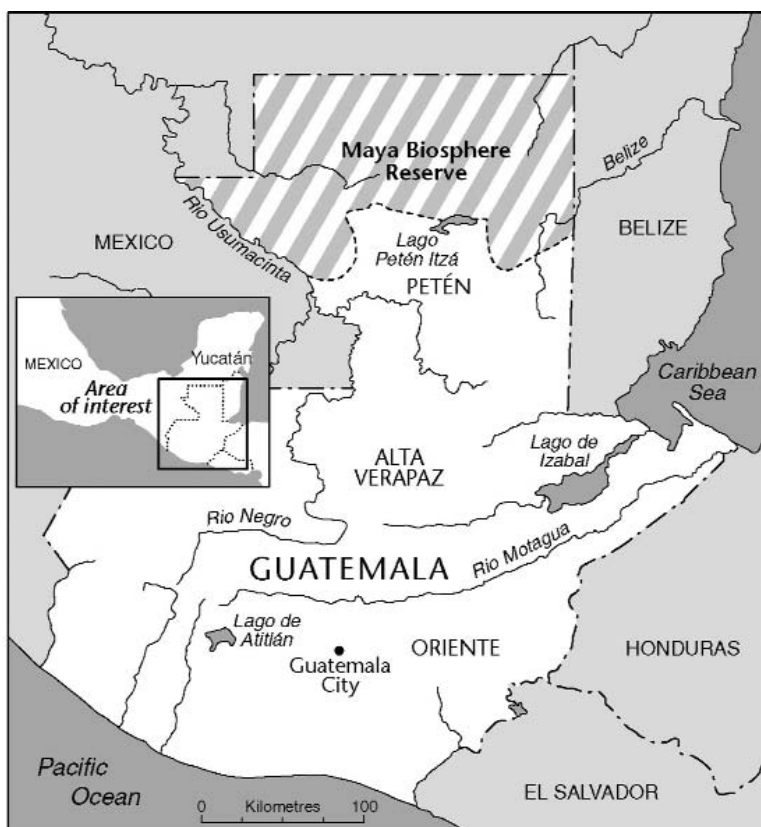


Figure 1. The Maya biosphere reserve accounts for about one-third of Guatemala's territory. (Cartography: Paul Jance)

The social relations that empower NGOs in Latin America, and their claims to technical expertise, impartiality, and good will, work to produce such knowledge as truths. Yet, my research leads me to suggest that [...] knowledge is always partial, selective, the product of particular configurations of power about the natural and social world.

and good will, work to produce such knowledge as truths about the natural and social world.⁶

However, my research leads me to suggest that such research data should not be understood as true reflections or mirrors of the world; rather, knowledge is always partial, selective, the product of particular configurations of power and knowledge.⁷

For example, studies on resource management purport to document specific sets of practices as a basis

for decision-making. And yet, research captures a moment in time and research reports tend to freeze this moment as *the way things are*. In the process, particular practices become fixed and, through repetition in policy documents, come to appear as traits essential to particular cultural groups.

Once attached to a particular group, these cultural and environmental traits are then considered as a basis for determining which groups are appropriate to the goals of conservation and which are not. Such determinations also delineate who will be included in or excluded from decision-making and who will or will not have access to natural resources. As they inform policy and planning, conservationists' truths directly impact the lives of local groups.

In this context, it is important to ask how local people, as individuals and collectives, interact with these truths generated about them. And, what are the implications for those social groups whose cultural traits and environmental practices are deemed inappropriate to the goals of conservation? To get at these questions, I narrow in on the every day discourses of conservation in the

Maya biosphere reserve, with attention to how they are elaborated, deployed, contested, and appropriated. Using a two-pronged approach, I draw upon textual analysis of NGO and government documents as well as ethnographic research undertaken between 1996 and 1997, including participant observation, semi-structured and structured interviews.⁸ After outlining the research context, the first section focuses on NGO discourses and illustrates how studies that profess to document natural resource management in the reserve also serve to fix cultural traits and environmental practices as essential to specific social groups.

I then shift to an analysis of how two differently positioned groups, *peteneros* (people of the Petén) and *sureños* (migrants from southern Guatemala) interact with these discourses and practices. *Petenero* communities have been historically dependent upon forest collecting, thus conservationist discourses position them as key to forest conservation in the reserve. *Sureños*, on the other hand, practice slash and burn agriculture and, consequently are framed as ignorant of appropriate human land relations. Drawing upon my ethnographic research, I illustrate how each group, as individuals and collectives, engage with conservationist discourses as they attempt to deal with the material implications of changing power structures and resource governance regimes in the reserve.

Research Context: the Maya Biosphere Reserve

In the popular imagination, the northern lowland forests in the department of Petén have long been seen as a source of wealth; for many, the region represented the country's future (Figure One).⁹ However, in the late 1980s, environmental activists revealed that the expansion of the cattle ranching industry, logging, and migrant farming had removed approximately 50 percent of the Petén's forest cover since the 1960s.¹⁰

Moreover, government policy to colonise the area, followed by internal displacements resulting from Guatemala's civil war, led to a dramatic increase in the Petén's population. In the mid-1960s, about 25,000 people lived in the area; by 1990, the population increased to 300,000 in 1990 and is currently believed to be over 500,000.¹¹

Activism by concerned environmentalists from Guatemala and the United States led to legislation creating a new system of protected areas and an administrative agency responsible for its management: the National Council of Protected Areas

Two). Although CONAP had the legal authority to implement the reserve, the state turned to the international community for financial and administrative support. In Guatemala, as in other Latin American countries, the shift to neo-liberal models of state-society relations and structural adjustment policies have meant that the state is unable or unwilling to provide many necessary social and environmental services.¹² In this context, the Guatemalan government signed an agreement in 1990 with the United States Agency for International Development (USAID) to fund and participate in the reserve's management. The

USAID contracted three US-based international NGOs to carry out conservation projects: The Nature Conservancy (TNC); Conservation International (CI); and CARE International.

The goal of the Maya Biosphere Project is to "improve the long-term economic well-being of Guatemala's population through the rational management of the natural resources."¹³ The primary goal of the reserve's Master Plan is stated as follows: "...to yield a harmonious and sustainable development in the region, guaranteeing the stability of the present natural and cultural resources."¹⁴ The biosphere reserve model was chosen in light of its stated aim to make sustainable development compatible with

nature protection.¹⁵ To achieve this goal, biosphere reserves are divided into nuclear zones with a high degree of protection; multiple use zones that permit "traditional" use; and buffer zones wherein sustainable development projects are implemented to

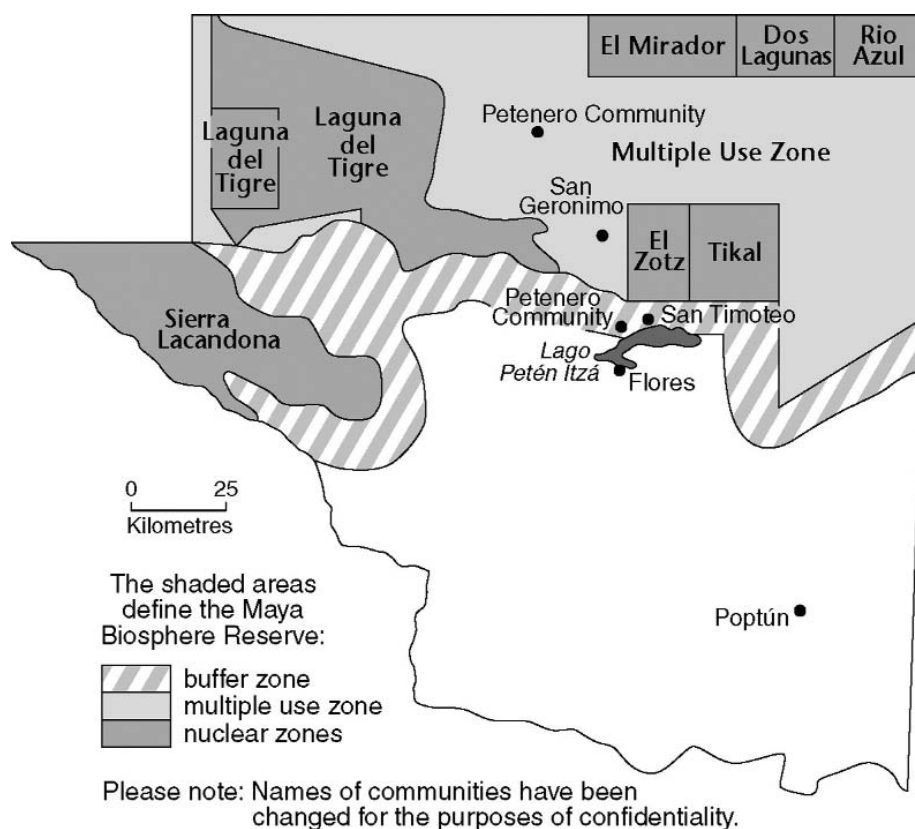


Figure 2 The Maya biosphere reserve's management zones. (Cartography: Paul Jance)

[Consejo Nacional de Areas Protegidas (CONAP)]. This legislation established the Maya biosphere reserve to protect 1.6 million hectares of tropical forest, rich with diverse species of flora and fauna (Figure

improve environmental management.

Producing Knowledge about Conservation's Actors

After the creation of the reserve, the NGOs began putting together their staff, compiling data on the vegetation, soils, rates of deforestation, and human-land relations, while also establishing project goals. Project directors, staff, and consultants tended to be from the United States. Although few Guatemalans served as consultants, several individuals from the Petén were hired on-staff. Through their research, NGOs produced knowledge that served as the foundation for projects designed to accomplish specific conservation goals.

In this section, I examine how studies define the primary actors appropriate to forest conservation strategies, while omitting or excluding other actors with stakes in the reserve, including conservationists themselves. As I illustrate, conservationist

Because they practice slash and burn agriculture, conservationist discourses frame migrants as the primary cause of deforestation in the reserve, to the exclusion of other actors such as powerful cattle ranchers, loggers, and oil companies.

discourses fixate on *peteneros* and *sureños*. This framing draws upon a local/outsider binary, which is correlated with knowledge of the biophysical environment as well as appropriate/inappropriate human-land relations.

Conservationist discourses define *peteneros* as members of communities historically dependent

upon forest collecting; this category includes *ladino*¹⁶ urban-based families whose positions of power are rooted in colonial era, as well as 20th century settlements of *ladino* forest collectors. Prior to the reserve's creation, a study directed by anthropologist James Nations estimated that 6,000 people in the northern Petén were involved in collecting "renewable natural

resources from the tropical forest" including *chicle* (gum or latex from *Manilkara zapote*), *xate* (decorative palm fronds, *Chamaedorea elegans* and *C. oblongata*), and allspice (*Pimenta dioica*), worth 6 million US dollars per year.¹⁷ In subsequent proposals and management plans, the extraction of natural resources from "natural ecosystems" is framed as key to the success of the reserve.¹⁸

Forest collecting is said to be a "traditional" form of resource management and therefore an appropriate use within multiple use zones. In addition, forest collecting is char-



Figure 3. Cattle Ranching in Petén. (Courtesy Juanita Sundberg)

acterised as being inherently conservationist. For instance, Nations' study suggests that harvesting non-timber forest products "promote[s] conservation and sustained use of the Petén tropical forest. Knowing that their economic future lies in the sustained use of *xate*, *chicle*, and allspice, families who harvest these resources are strong promoters of forest protection."¹⁹ In light of such characterisations, *peteneros* are framed as key to the reserve's success, which privileges them in relation to other actors with stakes in the reserve's natural resources.

Peteneros are defined in relation to *sureños* or immigrants from departments south of the Petén; the majority are *ladinos* from the *Oriente* region and Q'eqch'í from Alta and Baja Verapaz (see Figure One). Because they practice slash and burn agriculture, conservationist discourses frame migrants as the primary cause of deforestation in the reserve, to the exclusion of other actors such as powerful cattle ranchers, loggers, and oil companies.²⁰ Indeed, 86 percent of individuals from fifteen international and national NGOs surveyed in 1995 responded that immigrants are responsible for the deterioration of the reserve.²¹ One predominant opinion in conservation and development circles is that migrants slash and burn because they are unfamiliar with the region's ecology. For instance, one report argues that the migrants come from different regions of Guatemala where the ecological conditions are very different; this is said to "provoke a lack of understanding of the appropriate methods of a sustainable use of the natural resources" in the tropical lowlands.²² One study suggests: "the lush vegetation leads people to believe, mistakenly, that the land is extremely productive."²³ In a recent article new immigrants are said to "cut down large tracts of forest for extensive monocultivation of corn and cattle ranching because they are unfamiliar with the traditional livelihood strategies of the old forest society."²⁴

As these narratives illustrate, conservationist visions of how the reserve should be managed shape perceptions of social groups and their human land relations. Empirical documentation of *petenero* and immigrants' environmental practices is taken as evidence of fixed characteristics, which are understood as essential to

their culture. The environmental practices of *peteneros* are framed as appropriate to the goals of forest conservation, while migrant farmers are seen to have inappropriate traits. As a consequence of such naturalizing discourses, *peteneros* have been privileged within conservationist discourses and given a say in conservation policy-making processes. Migrant farmers, in contrast, have been framed as ignorant of appropriate resource management and therefore excluded from decision-making circles.

While these discourses have real implications in the lives of local people, my research suggests that they should not be understood as *true* reflections of human-land relations as they really are in the Petén. Rather, conservationists' truths are the product of particular configurations of power, which have empowered certain groups to shape knowledge in ways that reflect their goals and interests.²⁵ Indeed, a closer analysis of conservationist discourses reveals the ways in which *peteneros* have been able to shape the discourses of conservation to reflect their interests.



Figure 4. Migrant Farmer. (Courtesy Kevin Bray)

Petenero Discourses of Harmonious Forest Management

The *petenero/sureño* binary neatly coincides with, and in part reflects the perceptions and material interests of those who consider themselves to be *peteneros*. Many *peteneros* associate immigrants with subsequent changes in land tenure regimes initiated by the state. In this period, public land was privatised and previously usufruct rights to land came to depend upon ability to pay; in the process, many *peteneros* lost access to land and natural resources.²⁶ As the state's presence expanded in the Petén, *peteneros* experienced a loss of control over the region's future, a sentiment often manifest in *Revista Petén-Itzá*, a magazine produced by and for local elites.²⁷

Moreover, due to changes in economy and demography, urban-based *peteneros* have shifted from subsistence and resource based economies to employment in education, local government, administration, and tourism, thereby forming a middle class.²⁸ Because they had the education and skills necessary for employment, NGOs sought out many of these individuals; as noted above, NGOs also presumed that *peteneros* naturally have a stake in conservation. Projects associated with the Maya Biosphere Project created important sources of employment for *peteneros*. In turn, influential *peteneros* sought to shape the direction of conservation policy in ways that reflect issues of importance to this group.

Carlos Soza, a *petenero* who came to have a significant influence upon Conservation International's (CI) discursive representations and project designs – and eventually became the director of CI's local NGO, ProPetén – establishes clear distinctions between *peteneros* and immigrants in his study of the reserve.²⁹ Soza stipulates which communities can be clas-

sified as *traditionally petenero*; his categorisations are based upon geographical location, age of settlement, but also particular ways of interacting with nature.³⁰

Soza correlates length of time in the Petén with the adoption of appropriate environmental practices, suggesting that natural morals become apparent over time; thus *peteneros* are said to maintain "harmonious relations: man-nature."³¹

"Traditional" *peteneros* – whether forest collectors, farmers, or teachers – are said to have developed a "value system of ecological reciprocity: what one takes from the forest, one must return in some fashion."³² As an example of such relations, *peteneros* in the communities of Carmelita and Uaxactún are said to have "practiced agriculture only as a means of subsistence; and as such, for economic reasons, they are aware of the need for environmental conservation."³³

In contrast to *peteneros*, Soza suggests that *sureños* only care about intensive agriculture and if possible, ranching, and the forest doesn't matter to them.³⁴ He wonders why "these people have destructive attitudes instead of taking advantage of the forest and its benefits to themselves and others."³⁵ Indeed, they are said to be unable to recognise the value of precious hardwoods, which they simply burn for corn.³⁶

Such narratives are reproduced and elaborated by *peteneros* in the every day discourses of conservation. For example, Oscar, an NGO staff member stated that: "The *peteneros* farmer has always planted primarily for subsistence, with a little extra thrown in to sell." The immigrants on the other hand, clear large areas; "They have a commercial, merchant mentality." When asked for clarification about the specific difference between the two groups' environmental practices (size of the field,

management practices employed), Oscar provided no evidence. Instead, he simply replied, "the immigrants are not familiar with the ecosystems here in Petén, the soils are poor, and people just don't know how to manage their parcels." Narratives such as this, I suggest, serve to highlight why *peteneros* should be given positions of power within the reserve's decision-making circles.

In sum, *peteneros* were able to take advantage of the ways in which NGOs frame their environmental practices and cultural traits. Through employment in NGOs, *peteneros* both influence and appropriate conservationist discourses as a means of repositioning themselves in relation to new structures of environmental governance and power.

Immigrants and Discourses of Lack

As noted, immigrants are framed as ignorant of the lowland forest environment and as practicing an inappropriate land use practices, namely slash and burn farming. This has meant that migrants are viewed as targets of sustainable natural resource management projects, but not as participants in decision-making processes determining the reserve's future. In this section, I focus on how one community of migrant farmers negotiated the discourses of conservation to achieve goals consistent with their own interests.

San Diego is a community of migrant agriculturalists living within what is now the multiple use zone of the reserve; the 18-20 ladino and indigenous families have been in the area for 20-25 years.³⁷ After the creation of the reserve, these families faced an uncertain future and many feared they would be forced off lands to which they had no legal rights. In 1991, the Center for Education and Investigation of Tropical Agronomy (CATIE) based in

Turrialba, Costa Rica approached community members about establishing a community forestry concession. Approved in 1994, the concession gives the residents rights to manage a 7,039 hectare area zoned for agriculture, sustainable forestry, and forest conservation.³⁸

From the start, the project framed community members as unknowledgeable about appropriate resource management. For instance, CATIE's stated goal was to involve families in the "sustainable management of the area's natural resources in a way that permits them to better their quality of life while collaborating in the conservation of nature."³⁹ A statement in the *Management Plan* suggests that the "community will gradually gain the experience needed to ensure the sustainable management of the resources under their responsibility."⁴⁰ As these narratives suggest, the CATIE project was conceptualised as a means of teaching sustainable practices to those lacking knowledge of appropriate practices. The notion of lack is woven into the everyday discourses of conservation. For example, Marco, CATIE's director of community relations said, "we have tried with these people, but they just don't have a culture of planting trees."

Because they are said to lack knowledge of appropriate management practices, the project staff consistently exclude migrants from decision-making. Andrés' comment about the project's initial stages is indicative of how San Diego's inhabitants view their exclusion from major decisions affecting their lives.

"At first, they [CATIE] came and they held meetings and gave us talks and they collaborated with us in everything until they succeeded in convincing us of the forestry concession – because the land wasn't going to be parceled out. In that they told us the truth, although they have tricked

us many times. Now we are working on the concession only because they have already involved us, since the benefits from the harvest are minimal."

Because they are said to lack knowledge of appropriate management practices, the project staff consistently exclude migrants from decision-making

In turn, the president of the Concession Committee stated that the planning process did not involve locals directly. As he described it,

"we were invited to a meeting and they told us what they were doing and asked if it was good, and we approved." In reference to the construction of a nature trail, Andrés said it was built "because CATIE is

behind us telling us to do it." Male members of the concession are involved in the project primarily as day laborers and field assistants, carrying out instructions set out by the CATIE staff.

Even as they were excluded from decision-making, individuals in San Diego support the concession. My ethnographic research and interviews with a majority of the adult residents show that they support the concession because it enables them to achieve goals consistent with their own interests. The principal benefit is perceived to be land tenure security and the right to plant *milpa* or cornfields. Thus, Andrés commented that "the land is ours and we are paying taxes to harvest." Similarly, Francisco indicated, "the land is ours. We are paying taxes for it and the concession is for San Geronimo [and three other settlements]. So, we are the only ones that have rights to it." Chema said, "we know that we are renting this land and that they can't remove us, nor can others come in." Xavier seconded this comment saying, "no one can come and take it away or steal. Because people from other areas are not permitted to enter."

Even as people in San Diego saw themselves as achieving goals consistent with their interests, the ways in which the project framed them – as lacking knowledge of appropriate human land relations – had long-term implications. Migrants were consistently excluded from decision-making processes. In time, migrants came to frame themselves as incapable of decision-making. For instance, six years into the project, people in San Diego did not see themselves as capable of managing the concession alone. When asked about CATIE's impending withdrawal in 1997, most people said that they believed the project would not continue without further assistance. As Juan remarked, "We need help from people that are educated



Figure 5. Community Forestry Concession in Action. (Courtesy Juanita Sundberg)

[*preparado*]. This comment was seconded by Chema; “No [we can’t continue alone], because there are no educated people here.” Francisco said, “we need advice from someone who knows about these things. We work, but in written and other things, we can’t do it.”

In sum, the discourses and practices of conservation in San Diego frame migrant farmers as lacking in appropriate human-land relations; this notion of lack translated into exclusion from decision-making processes. Lacking rights to reside within the newly created boundaries of the reserve, migrant farmers in San Diego saw themselves in a vulnerable position. In this context, immigrants engaged with the discourses and practices of conservation in ways that enabled them to accomplish the goals of land tenure security and access to resources – even as they reproduced a discourse of lack.

Analysis and Concluding Remarks

In the Maya biosphere reserve, NGO discourses focus on the environmental practices particular to *peteneros* and immigrants, making them appear as essential or inherent cultural traits. These traits then are used as a basis for determining which local groups are capable of participating in decision-making processes, with uncertain consequences for those groups whose environmental practices are deemed inappropriate to the goals of conservation.

NGOs neglect the fact that environmental practices emerge in the context of specific political economic conditions – as these shift over time, so do people’s practices.

Such exclusionary practices are made possible by what is left unsaid. For instance, NGOs neglect the fact that environmental practices emerge in the context of specific political economic conditions – as these shift over time, so do people’s practices.⁴¹

Peteneros themselves are a clear example

of this argument, as many have shifted from forest collecting to service-based employment in the past forty years in response to changing conditions. NGO discourses also are silent about similarities in environmental practices between groups as well as the variation internal to each group (as in individual differences in environmental knowledge, practices, and values). For instance, one long-term study revealed little difference between native *petenero* and immigrants’ environmental values and knowledge.⁴² In addition, not all *peteneros* are pro-conservation, nor are all migrants anti-conservation.

If visions of nature and human land relations are effects of social relations rather than natural or static entities, how might they be renegotiated and reconfigured in ways that support inclusive rather than exclusionary futures?

As the brief examples outlined here suggest, NGO discourses are the product of specific configurations of power and knowledge, not objective mirrors of reality. In the face of changing power structures and environmental governance regimes, local groups in the reserve engage with, elaborate, and appropriate NGO discourses to reflect their own interests and goals. The outcomes are uneven.

While my analysis of the cultural politics of conservation is specific to the Maya biosphere reserve, my research leads me to conclude with a question of relevance to conservation the world over. If visions of nature and human land relations are effects of social relations rather than natural or static entities, how might they be renegotiated and reconfigured in ways that support inclusive rather than exclusionary futures? The answers to this question, I believe, are key to the creation of conservation policy that supports social equity and democratisation.

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Notes

- 1 Zimmerer and Carter, 2002; MacDonald *et al.*, 1997.
- 2 Bulmer-Thomas, 1996; Christen *et al.*, 1998.
- 3 Christen *et al.*, 1998; Torres, 1997.
- 4 Fieldwork in Guatemala from 1996-1997 was funded by an Institute of International Education Fulbright Fellowship. The University of British Columbia funded Additional fieldwork in 1999 and 2000. Fieldwork in June 2003 was funded by a Canadian Council of Social Science and Humanities research grant.
- 5 Latour, 1999; for a summary of the debates, see Soulé and Lease, 1995.
- 6 Byant and Bailey, 1997; Fisher, 1997; Foucault, 1978.
- 7 Haraway, 1989; Demeritt, 2001.
- 8 This paper would not have been possible without the generosity and participation of the men and women residing in the Maya biosphere reserve. However, I am responsible for the argument presented here.
- 9 Schwartz, 1990; Soza, 1970. I would like to thank Paul Jance for the maps.
- 10 Ponciano, 1998.
- 11 Schwartz, 1990; Nations, 1999.
- 12 Bulmer-Thomas, 1996. The World Bank – advocate of shrinking the state – has argued that Guatemala spends too little on social services and must expand tax-support to sustain growth (Spence *et al.*, 1998).
- 13 USAID, 1989, p. 1.
- 14 CONAP, 1996, p. 11.
- 15 UNESCO, 1984.
- 16 *Ladino* is the term used in Guatemala to refer to a person of mixed European and indigenous descent; it can also refer to an indigenous person who no longer identifies him or her self as such.
- 17 Nations *et al.*, 1988, p. 10; see also Nations, 1992.
- 18 Nations *et al.*, 1989, p. 4.
- 19 Nations *et al.*, 1988, p. 11. This statement reproduced in Nations *et al.*, 1989, p. 16.
- 20 For an elaboration of these discourses, see Sundberg, 1998.
- 21 Soza, 1996, p. 153.
- 22 SEGEPLAN, 1993, p. 2.
- 23 CARE, 1996, p. 5.
- 24 Gradia *et al.*, 1998, p. 367.
- 25 Here I draw from a central tenet of political ecology, which considers *claims to know* as relative to the position of the knowledge producer (Blaikie and Brookfield, 1987). As Watts and Peet (1996, p. 261) suggest, "all thought systems are understood as serving the interests of specific social forms of power."
- 26 Schwartz, 1987, pp. 163-183.
- 27 Between 1958 and 1986, the principal authority in the Petén was a military-led institution – the National Agency for Promotion and Development of the Petén [*Empresa Nacional de Fomento y Desarrollo de El Petén* (FYDEP)]. FYDEP was given "extensive and in practice exclusive authority" in the Petén, ostensibly to promote economic development in the region (Schwartz, 1990, p. 253).
- 28 Schwartz *et al.*, 1997.
- 29 Soza, 1996. In this case, I use the individual's name, as I am citing his book. Soza is not the only individual to have an influence over conservationist discourses and strategies for the multiple use zone however, he is one of the few to have published an influential study. Sadly, Soza died of cancer in June 2003; the environmental movement has lost one of its important leaders.
- 30 Soza, 1996, p. 112.
- 31 Soza, 1996, p. 100, 108. In addition to distinct land-use practices, *petenero* settlements are said to have maintained steady populations, unlike the "demographic explosion" witnessed in migrant communities (Soza, 1996, p. 62).
- 32 Grandia *et al.*, 1998, p. 366.
- 33 Soza, 1996, p. 19.
- 34 Soza, 1996, p. 63.
- 35 Soza, 1996, p. 18.
- 36 Soza, 1996, p. 112.
- 37 The names of the community and its inhabitants have been changed to protect the identity of the individuals. The families in this community identified as ladino, Chorti', and Mopan; it was difficult to learn about ethnic identity as many people in Guatemala are accustomed to hiding such information.
- 38 Gretzinger, 1998.
- 39 CATIE, 1992, p. 1.
- 40 CATIE, 1994, p. 1.
- 41 Blaikie and Brookfield, 1987; Byant and Bailey, 1997.
- 42 Atran and Medin, 1997, p. 181.

Tensions and paradoxes in the management of Transboundary Protected Areas

William Wolmer

Summary. Ecoregional planning at an increased spatial scale has become the driving paradigm in protected area planning. This paradigm, which underpins Transboundary Protected Areas (TBPAs), holds that ecological integrity does and should transcend administrative and national boundaries. Yet such initiatives are in practice intrinsically political and raise important questions about power, accountability and legitimacy. This paper investigates the cultural politics of TBPAs, drawing out several ideological and practical tensions inherent in TBPA management at the global, regional and local scales. These include: the divergence between grassroots bioregionalism and top-down, technical ecoregionalism; trade-offs between conservation goals and attracting private sector investment and power asymmetries in public-private partnerships; the ceding of national sovereignty to supra- and sub-national entities; and tensions between the centralised and top-down nature of TBPA agreements and rhetoric on community participation and empowerment. Much experience to date suggests that many TBPAs are more likely to increase centralised state power and constrain livelihood strategies than to boost communities' socioeconomic opportunities or role in management. In conclusion the paper makes recommendations for the more equitable and effective management of TBPAs.

At the 2003 World Parks Congress

Transboundary Protected Areas (TBPAs) were trumpeted as an idea whose time has come. The Congress recommended taking actions to create and promote new TBPAs as an important strategy for both safeguarding biodiversity and delivering 'benefits beyond boundaries'. These bilateral (and sometimes multilateral) conservation initiatives have proliferated in recent years and South Africa, for example, is currently engaged in six of them.

Alongside the re-establishment of ecological integrity TBPAs have a remarkably ambitious set of objectives including promoting regional economic integration, community empowerment and fostering peace.¹ The transboundary conservation discourse is embedded in a new global cultural politics of conservation drawing together a wide grouping of ideologies and actors such that the private sector and international finance institutions have found common cause with global environmental organisations and some national governments. TBPAs appear

simultaneously to meet conservation priorities, corporate agendas and governance goals (at national, regional and international levels).

Yet perhaps inevitably given the turbulent history of protected areas – even those without such a complex range of actors and interests – TBPAs generate certain tensions and points of conflict. Each TBPA has its own unique dilemmas that may not be repeated elsewhere. There seem to be, however, several more general paradoxes or tensions inherent in the establishment and management of 'natural' ecoregions in variegated cultural landscapes – both ideological and practical, and at the global, regional and local scales. This paper will explore the tensions between: radical bioregionalism and scientific ecoregionalism, ecoregionalism and neoliberalism, TBPA planning and national sovereignty, and top-down and bottom up managerial processes. From all of the above, the paper will draw recommendations for the more equitable and effective management of TBPAs.

Transcending or superimposing politics?

The rise and rise of Transboundary Protected Areas owes much to the fact that bioregional, 'ecoregional' or 'landscape-level' planning at an increased spatial scale – like integrated regional planning and community co-management in previous decades – has become a driving paradigm in protected area planning. The guiding principal is that 'artificial' human-imposed administrative boundaries rarely coincide with ecoregions:

*"As the views of our planet from space make clear, nature does not acknowledge or respect the boundaries with which we have divided our planet. As important as these boundaries are for the management of our political affairs and relationships, they are clearly transcended by the unitary nature of the natural system on which our lives and well-being depend."*²

What this privileging of biophysical over political units means in practice for protected area management is that, increasingly, rather than being boxed into small areas, protected areas are being opened up across administrative, and even national, bound-

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aries to create large and newly coherent landscapes and management entities. In this ambitious new era for conservation it is no longer enough to focus on the preservation of protected enclaves. Ecological integrity – and a lot more besides – can be established with trans-boundary conservation initiatives. The emphasis has also

shifted to the enhancement or restoration of 'natural' or 'traditional' landscapes more broadly and even recreating landscapes perceived as lost by 'rewilding'. However this process is not happening in a vacuum: crucially this ecological integrity is being exported to the political sphere as these

spaces are becoming statutory units of landscape management. These areas of newly minted ecological integrity and political authority are being superimposed on complex, contested, and variegated cultural landscapes with pre-existing overlapping institutional authorities and political constituencies, and patchworks of differing land uses and tenure regimes (including public, private and communal ownership).

Inevitably Transboundary Protected Areas, theoretically meant to transcend political boundaries and units, are in practice intrinsically political entities. As large scale regional planning and investment initiatives spanning multiple institutional frameworks, and with varying degrees of collaboration between the state, private sector and civil society, they superimpose further layers of politics and raise important questions about power, control, authority, accountability and legitimacy at a variety of scales.

Radical bioregionalism or technical ecoregionalism?

The concepts and philosophies underpinning TBPA's come from a diverse range of sources and its advocates constitute a sometimes surprising coalition of interests that often pull in different directions. One such conceptual tension is between radical bioregionalism and scientific ecoregionalism. Bioregion and ecoregion are terms used interchangeably but they have rather different provenances. This distinction is of more than arcane academic concern – it has fundamental implications for the governance of TBPA's.

Bioregionalism is a, largely northern, eco-centric philosophy and social movement which holds that the earth consists of contiguous but discrete 'organic regions' or 'bioregions'. A bioregion is 'a place defined by its life forms, its topography and its biota, rather than by human dictates; a region governed by nature, not legislature'.³

Local and regional cultures are physically and symbolically rooted in these 'home-lands' which are seen as the most appropriate units for political organisation.

Bioregionalists argue passionately for political autonomy, decentralised governance, grassroots empowerment, social equity and self-sufficiency. The approach has played out in efforts, primarily in North America, but increasingly in Europe and Australia to work at the scale of the ecosystem to find a balance between their needs for livelihoods and the natural resources in their bioregions.⁴ These are grassroots, 'bottom up' initiatives led by communities themselves characterised by the devolution of power to local and regional bodies and the construction of governance around bounded places. In its most extreme form the bioregional movement rejects all forms of centralised authority.⁵

Elements of this bioregionalist philosophy have entered mainstream conservation thinking as ecoregional planning. However the radical political agenda has been ditched in favour of a scientific discourse which draws on conservation biology to argue that achieving sustainability and conserving biology requires shifting conservation programmes to ecosystem scales of management.⁶ Habitat fragmentation has been identified as a major threat to preservation of biodiversity – and the means to combat this fragmentation and 'restore ecosystem functions' is to enlarge protected areas, establish 'connectivity' by linking them with biodiversity corridors and, at the macro level, establishing global ecological networks. This mandate for protected area expansionism derives largely from the increasingly science-driven conservation ethic. Conservation biology confers conservation priority status on habitats that had been ignored by the previous generation of conservationists inspired by the romantic wilderness ethic because they were not sufficiently aesthetically pleasing.⁷ In Africa, for

example, this logic leads to recommendations that 'biodiversity conservation be extended even further, beyond buffer zones and protected areas, to include all elements of the African landscape and all ecosystems' and that 'Africa should endeavour to join all its game parks contiguously from Cape to Cairo'.⁸

Ecoregionalism, however, is a managerial as much as a scientific discourse. It has been accompanied by a revival of top-down approaches to priority-setting and planning landscapes as a whole – variously described as 'strategic', 'comprehensive', 'integrated' and 'plan-led'.⁹

Although this discourse shares radical bioregionalism's desire to establish or preserve regional integrity, it has excised or sanitised much of its idealistic social goals. Gone is the emancipatory rhetoric of 'liberating the self' and achieving non-hierarchical citizenship rooted in reciprocity and co-operation. Gone too is much of the political commitment to bottom-up development and devolved power. In its stead comes the dispassionate and largely depoliticised language of 'stakeholders', 'partnerships', 'participatory planning', and 'capacity building'.¹⁰

The danger of extreme bioregionalism is that it plays to an agenda of the political right that rejects altogether centralised political authority and regulation

In recent years there has been a backlash against ICDPs which have been accused of failing to protect species and their habitats.¹¹ There is a danger – from the point of view of advocates for people-oriented conservation – that the protectionist expansionism of the ecoregional planning paradigm will provide legitimacy for a return to an authoritarian protectionist conservation paradigm which had been curbed by the predominance of the community-based conservation discourse.¹² As we shall see, ecoregional planning's ostensibly impartial scientific and managerial focus potentially masks

fundamental power – or governance – implications.¹³

The danger of extreme bioregionalism is that it plays to an agenda of the political right that rejects altogether centralised political authority and regulation.¹⁴ But have ecoregional planning's exclusion of 'moral or political considerations in favour of indifferent technical and political solutions'¹⁵ and its top-down biases moved us too far away from the ideals of devolution and bottom-up planning, rooted in local cultural concerns and practices?¹⁶

Ecoregionalism and neoliberalism

Another tension inherent in the governance of TBPA's derives from the curious intersection of ecological/scientific discourses with discourses of global governance that emphasise the extension of neoliberal economic management.¹⁷ This model which currently dominates development thinking promotes an investment led approach, with the role of the state being to provide an enabling environment to stimulate private sector involvement.

TBPAs are thus promoted as key revenue generators, providing an enabling environment for investment, especially in ecotourism, as well as being instruments for leveraging private sector investment to 'maintain and grow ecological capital'. In Africa, for example, TBPA's are marketed as the [African] dream ticket combination of economic growth and environmental conservation and a means of restoring investor confidence in the continent.¹⁸ TBPA's, it is argued, enable economies of scale to be exploited, they allow for regional marketing and provide an opportunity for the private

sector (and donors) to benefit from a politically correct 'green image' by investing in nature related activities.¹⁹

Peter Brosius has drawn attention to a further way in which ecoregional planning and neoliberal economics discursively intersect. With massive funds necessary for large-scale ecoregional planning initiatives large conservation organisations are becoming increasingly business-like – developing funding strategies in conjunction with multilateral development banks and building corporate linkages.²⁰ These funding structures as well as the managerial tools of these large-scale and top-down initiatives inevitably privilege 'big conservation' (transnational conservation organisations) at the expense of grassroots or even national conservation organisations.

Thus the private sector and international finance institutions have found common cause with global environmental organisations, with donor-recipient governments forced to 'follow the stream'.²¹ This new neoliberal melding of conservation and commercial goals throws up certain problems for TBPA's. Conservation and business obviously do not necessarily pull in the same direction and when they do it can be to the detriment of stakeholders other than investors, particularly local communities.

Private-community partnerships are often forced rather than chosen and the private sector is almost always the stronger partner and initiator of joint-ventures

A key element of this trend is the rise of public-private and private-community partnerships and joint ventures in conservation and tourism. Indeed encouraging partnerships between government, the private sector and civil society in sustainable development and natural resource management was one of the major, and most controversial, themes of WSSD in 2002. This is part of the global switch to public private networks to provide

goods and services that were once the preserve of state controlled public sectors. The extent to which government should form alliances with business in areas of general public interest and the intrusion of private sector values into these spheres are, of course, crucial governance questions.²²

A critical question for TBPA is whether these new partnership arrangements prioritise investment or equity? Do they spread the benefits of new investments in and around protected areas, or do they simply constitute a licence for private sector territorial claims at the expense of communities' land and resources as commons are privatised? Critics of private-community partnerships in southern Africa, and especially Mozambique, have pointed

Good governance in this context tends to mean less governance – with the state reduced to an 'investment promotion agency'

to large areas of land given up to private investors to become resource extraction enclaves regardless of claims by local people and existing uses.²³ Partnerships in this context are often forced rather than chosen and are characterised by power asymmetries. The private sector is almost always the stronger partner and initiator

of joint-ventures, with communities often relegated to the role of landowner – in what are in reality little more than lease agreements – and employee, ceding representation to NGOs or community leaders in processes that are not always transparent. These 'communities' often lack the capacity to hold the private sector to account, as governments have not provided adequate incentive, regulation or technical back-up for communities to act as genuine partners.²⁴

Where government's first priority is private sector investment, and there is not a great deal of competition between investors, the



Figure 1. Elephants damage crops and veterinary fence, Zimbabwe. (Courtesy IUCN-ROSA)

private sector also often has considerable influence vis-à-vis the state. The focus of both the state and private interests on investment and economic growth can overshadow conservation and livelihood priorities. This is evident where TBPA are integrated into regional economic integration initiatives such as South Africa's Spatial Development Initiatives in which government funds are used to leverage private sector investment to unlock economic potential in certain zones and spur growth. Good governance in this context tends to mean less governance – with the state reduced to an 'investment promotion agency'.²⁵ TBPA, despite their potential ecotourism and spin-off investment potential are thus vulnerable to competition from other, potentially more lucrative, private sector interests including extractive industries such as mining.²⁶

TBPAs and national sovereignty

Given that TBPA are intrinsically political entities their establishment will clearly have implications for national sovereignty. Inevitably they have a potential impact on a state's ability to make independent decisions regarding sovereign resources.²⁷ Most obviously states must cede a degree of control over those resources to neigh-

bouring states since their transboundary nature implies being managed jointly by two or more governments. However there are multiple powerful actors, other than national authorities, involved in the management of TBPAs – states and official bodies operate in complex ways with NGOs and other elements of civic society and private enterprise at national, regional and international scales.

Much is made of the potential for TBPAs to operate as symbolic 'Peace Parks' which will foster good political relations and security through the encouragement of inter-state collaboration and cooperation around issues of common concern.²⁸ In the African context the identification with nature above nation ties in with Pan-African visions of reuniting a continent artificially carved up by colonialism;²⁹ healing the wounds of pre- and post-independence wars of destabilisation;³⁰ and achieving the 'cultural harmonisation' of divided ethnic groups (i.e. re-establishing cultural integrity as well as ecological integrity).

However in the messy real world this post-national symbolism runs up against divergent national interests and agendas. Indeed attempts to bind states into formal transboundary conservation agreements may be as likely to cause inter-state disputes as to assuage them. This is particularly true of situations where there are dif-

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ferences in the economic power of the partner nation states and their perceived ability to negotiate their interests. Asymmetries in the partner states' incomes, degrees of park and infra-structural development, political stability and security and available financial resources; as well as diverging veterinary and immigration policies are all potential sources of dif-

ficulty.³¹

It seems wistful thinking that TBPAs are likely to be anything other than a very low priority for governments in actual conflict situations. It is worth remembering that protracted disorder can actually foster the interests of elite groups through the subversion of the interests and legitimacy of state.³² Such groups may resent and resist the exposure to prying eyes of zones of illegality (poaching etc) and more effective law enforcement that TBPAs would bring.³³

Similarly whilst the re-establishment of historical links where communities have been divided by political borders imposed by colonial powers is frequently promised, is it likely, feasible or desirable that governments will be willing to cede power or territory to ethnic groups spanning their borders?

Whilst states' might be unwilling to give up too much power to neighbouring states TBPAs also involve ceding considerable authority and decision making power to a range of supra-national entities – such as bilateral and multilateral donors, international NGOs and multinational companies – and sub-national entities which often bypass state authority structures. In particular powerful international conservation NGOs and consultancy companies or 'facilitating agencies' often exercise considerable power in collaborative management arrangements.³⁴

Top-down or bottom up?

A final set of tensions inherent in the governance of TBPAs that I want to explore are those between top-down approaches that prioritise conservation and/or centralised power and bottom-up approaches prioritising local development. Are the voices of the poor heard in ecoregional planning processes?

Despite the recent critique of integrated conservation and development programme it remains politically unfeasible to ditch the rhetoric of community participation in TBPA in developing countries. This rhetoric is essential for the political legitimacy of protected areas in poor countries and for fundraising from donors concerned principally with development issues. But what is this rhetoric and what does it add up to in practice?

TBPAs are described as a means for the socio-economic uplift and empowerment of previously marginalised communities that are able to derive benefits from and participate in their management as key sub-state entities. In practice, however, the familiar refrain from case studies of TBPA processes is one of communities being 'consulted', if they are lucky, about plans already made at higher levels, and rarely being represented on decision-making bodies. Given their formal bilateral nature, most TBPA agreements are by definition top-down. Massive power asymmetries and

ist idea of devolved homelands.

One crucial dilemma inherent in pitching TBPAs as vehicles for rural development is that the revenues and job opportunities they provide for local communities are often dwarfed by the opportunity costs of livelihood strategies forgone. As Zimbabwe's experience of CAMPFIRE shows it is notoriously difficult to generate substantial revenues from wildlife for local communities – even with safari hunting.³⁶ With ecotourism initiatives there is a particularly high leakage of revenue away from local communities to national and international elites and tourism is a notoriously fickle commodity as Zimbabwe's recent experience also shows. A further dilemma is that community development programmes in and around TBPAs may lead to the very infrastructure that ecotourists in search of wilderness and primitivity are seeking to avoid.³⁷

TBPAs are clearly damaging to livelihoods when the expansion of protected areas requires evictions, but less obviously they threaten transboundary livelihood strategies. National boundaries can both criminalise livelihood strategies based on mobility (such as transhumant pastoralism and labour migration) and create opportunities for illicit activities (such as smuggling and trafficking). Border regions in this regard tend to be areas of fluidity and illegality: their physical remoteness from the centres of power, less developed nature and sparse populations often mean they escape the exercise of state power to a certain extent. Establishing TBPAs in these contexts has clear governance implications. It means bringing state authority and infrastructure to these marginal areas. States establishing TBPAs along their borders are being given tools that may extend their control

Given their formal bilateral nature, most TBPA agreements are by definition top-down. Massive power asymmetries and structural conditions work against development of appropriate institutions for local conservation by local actors themselves



Figure 2. Illegal settlement in the Great Limpopo Transfrontier Park (Zimbabwe) by formerly dispossessed locals. (Courtesy IUCN-ROSA)

structural conditions work against development of appropriate institutions for local conservation by local actors themselves.³⁵ This is all a long way from the bioregional-

and law enforcement over these areas and enhance their power over communities rather than empowering them.³⁸ The paradox is that just as TBPA are allowing freedom of movement of tourists and wildlife across borders, long-established cross-border livelihood activities such as trading and labour migration are being policed and constrained.³⁹ Whilst transboundary connections and big bioregions are being espoused local populations are often being fixed into small static villages.⁴⁰

The use of conservation as an excuse for territorial control has uncomfortable echoes of the coercive establishment of protected areas for many communities. The history of protected areas in much of the world is one of alienation of ancestral land; and criminalisation of livelihoods via attacks on 'poaching' and 'squatting'.⁴¹ Consultation or participation will not change many rural peoples' suspicions of TBPA unless it attends to these broader social and political legacies.⁴² Indeed plans for local participation and benefit sharing of ecotourism revenues are not the same as the frequent demands from local communities for power to control, use and access environmental resources.⁴³

However, as the South African experience of land restitution in national parks has shown, where communities have been granted sovereign power to control the use of their ancestral land within protected areas there is considerably more potential for them to find a voice in TBPA processes. Having explicit and secure land rights gives local communities opportunities to outsource their own ecotourism and safari concessions and gives them bargaining power vis-à-vis the state and private sector.⁴⁴ Where communities have secure land tenure within TBPA it will increasingly make sense to negotiate a degree of multiple land use incorporating the collection of natural resources.

Conclusions and recommendations

TBPA are new governance entities defined by quasi-ecological criteria which are being superimposed on pre-existing administrative authorities. They tend to be driven by international conservation organisations and principally serve the economic and political interests of entrenched and emerging national, regional and international elites.⁴⁵ In contrast to the opening of science to plural perspectives, with the emergence of deliberative, inclusionary approaches to decision-making in the fields of health and biotechnology for example, there is a danger that ecoregional planning implemented in a top-down, technocratic manner by remote experts will lead to an erosion of the limited gains of participatory planning in protected area management of the last twenty years.

What lessons can be learnt from this rather sceptical overview of some of the tensions inherent in TBPA governance? The first is that we cannot wish away the political dynamics of TBPA but need to get to grips with them. Ignoring power and politics in institutional design will eventually result in failure and the capture of the process by those with power and resources. Despite the adoption of 'good governance' as part of the international consensus and World Bank orthodoxy on development much of the literature on governance, particularly in developing country contexts, is surprisingly naive about politics. It assumes, or asks for, as if they can be delivered swiftly and unproblematically, free and fair elections, confidence and capacity for exercising voice at local levels and so forth. It seeks a model of responsive governance and service delivery with strong links to accountability, representation and democratic empowerment. This is the fantasy underlying much of the rhetoric about decentralisation in Africa which bears little resemblance to reality of bitter power struggles, gatekeepers and elite capture.⁴⁶ It assumes govern-

ments serve the common good of their citizens and ignores the possibility that conservation might be used as excuse for territorial control or elite accumulation.⁴⁷ Secondly if we are serious about empowering local communities as stakeholders in TBPA processes secure access to land and resources is the *sine qua non*. Allowing communities to retain or regain utilisation and ownership rights over land and access to natural resources should not be regarded as a dangerous precedent for conservation but as an essential prerequisite for its success. Strengthening tenure rights means more legal, economic, political power for communities and greater negotiating strength in their dealings with the private sector: they have more control over the type of development and nature of partnership.⁴⁸

Thirdly, where possible, the government should use its power on behalf of the weaker party in negotiating community-

There needs to be recognition that informal arrangements for transboundary natural resource management like transhumance are often more effective than formal TBPAs and an appreciation that facilitating cross-border livelihood strategies is as important as encouraging movement of wildlife and tourists

private partnerships around TBPAs and provide greater incentives for the private sector to be 'pro-poor'. For example, by incorporating community involvement and equity criteria in the selection of bids for ecotourism concessions on state land.⁴⁹

Fourthly, there are no programmatic blueprints for TBPAs. Each needs to be planned, implemented, evaluated and adapted around specific circumstances of each situation.⁵⁰ Problems – such as

trade-offs between human development needs and nature protection – should be addressed in context and arrangements for decision-making and power-sharing locally negotiated and re-negotiated via open dia-

logue with recognition of the inherent power asymmetries. Formal agreements and protocols tend to derive from top-down, non-inclusive processes and are not necessarily sensitive to local strategies and institutional arrangements for transboundary resource management. There needs to be recognition that informal arrangements for transboundary natural resource management like transhumance are often more effective than formal TBPAs and an appreciation that facilitating cross-border livelihood strategies is as important as encouraging movement of wildlife and tourists.

Fifthly, given the potential extreme sensitivities at local, national, regional and international scales raised by TBPAs there is a need to proceed slowly and cautiously, avoiding political grandstanding and media-hype. Lessons can be learnt from the PR-conscious release of elephants into the Mozambican portion of the Great Limpopo Park to coincide with a benefactor's birthday and the African Union Summit despite lack of advance planning and community awareness.⁵¹

Finally we would perhaps do well to revisit some of the ideals of the bioregionalist movement abandoned with the rise of practice of ecoregional planning and adopt full participation, self-representation, and self-determination as core principles of future TBPA endeavours.⁵²

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Notes

- ¹ See, for example, van der Linde 2001.
- ² Strong, 1992.

- 3 Sale, 1985: 43; Wolmer, 2003.
- 4 Miller 1996.
- 5 Fall 2003.
- 6 e.g. Miller 1996; Pirot *et al.* 2000.
- 7 Calicott and Nelson 1998.
- 8 Biodiversity Support Programme, 1993; de Villiers, 1999.
- 9 Brosius, 2003.
- 10 Wolmer, 2003.
- 11 Terborgh, 1999; Oates, 1999; Wilshusen *et al.*, 2002.
- 12 Jones and Chonguica, 2001.
- 13 Ferguson, 1990.
- 14 McCloskey, 2000; Fall, 2003.
- 15 Brosius and Russell, 2003: 46.
- 16 Brosius, 2003; Wilshusen *et al.*, 2002; Brechin *et al.*, 2002.
- 17 Duffy, 2002.
- 18 Draper and Wels, 2002; Hanks, 2003.
- 19 van der Linde *et al.*, 2001.
- 20 Brosius, 2003.
- 21 Magome and Murombedzi, 2003.
- 22 Graham *et al.*, 2003.
- 23 Jones and Chonguica, 2001; Ashley and Wolmer, 2003.
- 24 Ashley and Wolmer, 2003; Katarere *et al.*, 2001; Magome and Murombedzi, 2003.
- 25 Soderbaum and Taylor, 2001.
- 26 Duffy, 2002.
- 27 Singh, 2000.
- 28 Sandwith *et al.*, 2001; Hanks, 2003.
- 29 Draper and Wels, 2002; Ramutsindela, 2002.
- 30 Koch, 1998.
- 31 Katere *et al.*, 2001; Simon, 2003; Wolmer, 2003.
- 32 Chabal and Daloz, 1999; Bayart *et al.*, 1999.
- 33 Duffy, 2002; Peluso, 1993.
- 34 Duffy, 2002.
- 35 Neumann, 1997; Zerner, 2000; Duffy, 2002; Brosius and Russell, 2003; Wolmer, 2003; RRP, 2002.
- 36 Bond, 2001.
- 37 Gordon, 1992; Neumann, 1997; Draper and Wels, 2002.
- 38 Singh, 2000; Duffy, 2002; Brosius and Russell, 2003; Scott, 1998; Schroeder, 1999.
- 39 Wolmer, 2003.
- 40 Hughes, 2002.
- 41 MacKenzie, 1988; Adams and McShane, 1992.
- 42 Wilshusen *et al.*, 2002.
- 43 Neumann, 1997; Duffy, 2002.
- 44 Magome and Murombedzi, 2003; Wolmer *et al.*, 2003.
- 45 Simon, 2003.
- 46 Wolmer and Scoones, 2003.
- 47 Wilshusen *et al.*, 2002.
- 48 Katerere *et al.*, 2001; Ashley and Wolmer, 2003; Magome and Murombedzi, 2003.
- 49 Ashley and Wolmer, 2003.
- 50 van der Linde *et al.*, 2001.
- 51 Katerere *et al.*, 2001; Mail and Guardian 26/4/2002; RRP, 2002.
- 52 Brechin *et al.*, 2002; Miller, 1996.
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Why history and culture matter— a case study from the Virgin Islands National Park

Crystal Fortwangler and Marc Stern

Summary. The best path to improving relationships with local residents is through treating them neither solely as opportunities nor as threats, but first and foremost as people, which mandates a focus on and respect for the unique histories and cultures of the populations inhabiting areas near protected areas. Using data from research carried out by two separate researchers over a period of six years on the Caribbean island of St. John, this article aims to answer the question *how and why do history and culture matter to conservation vis-à-vis protected areas?* Using numerous examples we illustrate the connections between cultural and historical understanding, trust, and the maintenance of resources within the protected areas of St. John, which is part of the U.S. Virgin Islands. We explain the significance of historical and cultural influences upon local responses to protected areas and highlight their consequences for the protection of the resources therein. We argue that the ways in which people interpret protected area agencies' level of respect for and attention to their unique histories and cultures can have significant impacts upon the success of their management. We also highlight the significance of appropriate cultural and historical interpretation and communication in developing the relationships upon which local nature protection depends. Our results show that park planners and managers should place greater emphasis on viewing park neighbors as people just like themselves, who care about the places in which they live and have emotional connections to the landscapes and histories encompassed within protected area borders. Just as the realisation has come about that natural resource management should be based on sound natural resource science, in the human-dominated landscapes that surround and infiltrate most protected areas, the successful protection of resources will also be dependent upon sound social science.

The relationships between protected areas and people living within their immediate vicinities are significant for a number of reasons. The impacts parks have on local residents can be tremendous, ranging from restricting access to vitally important and historically available resources to reshaping the entire economy of a region by attracting both tourists and new types of residents, thus changing the resource base. A great body of literature characterises (and often laments) such impacts and raises significant moral arguments on behalf of those affected.¹ Another body of literature tends to characterise local residents as potential threats to protected areas through continued resource exploitation.² Still others characterise local residents as opportunities for partnership and improved conservation

based upon their knowledge of the landscapes they live in, their ability to influence adjacent land use, and the potential for labor and support they provide.³ No matter which characterisation one favors, interacting well with people living on the peripheries (or within) protected areas will always present a critical challenge for successful resource protection.

We argue that the best path to improving relationships with local residents is through treating them neither solely as opportunities nor as threats, but first and foremost as people, which mandates a focus on and respect for their unique histories and culture. Using data from research carried out by two separate researchers over a period of six years on the Caribbean island of St. John, this article aims to answer the ques-

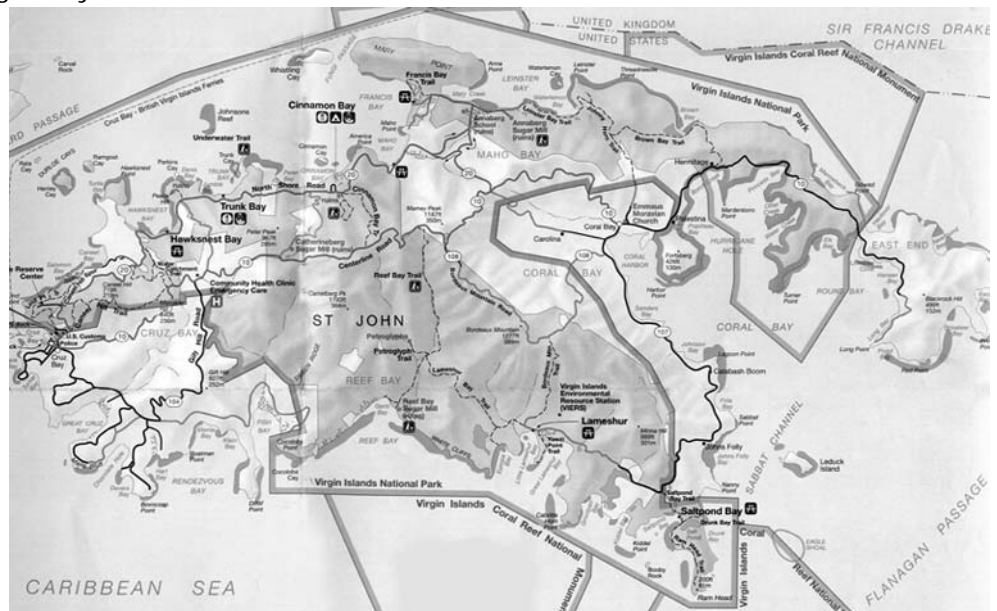
tion *how and why do history and culture matter to conservation vis-à-vis protected areas?* In doing so, we take a managerial viewpoint, linking cultural and historic factors directly to the protection of park resources. In this way, we hope to bridge the gap between those viewing people primarily as threats and those viewing them as opportunities, since the one thing all natural resource managers should share in common, by their very mandates, is concern for the well-being of the resources they are charged with protecting.

Both anthropological and sociological methods were employed by each researcher. Fortwangler has been conducting research on St. John for over 6 years, living on the island for a period totaling two years. She employed traditional ethnographic techniques (e.g., participant observation) and semi-structured interviews (N=90) to analyze the relationships between natural resource politics and the sense of place of island residents. Interviews focused on the relationships people have with St. John and the people living on the island, visions they have about the island and questions specific to the protected areas. Stern's research presented herein employed structured interviews (N=115) and participant observation to gauge the relative importance of different types of evaluations undertaken by local residents in formulating their responses to the park. Statistical tests were employed to determine the relative significance of respondents' assessments of the costs and benefits associated with the park's presence on the island, perceptions

about the attitudes of their peers, perceived levels of local involvement in park-related decisions, and levels of trust for local park managers. In addition to demographic and other situational characteristics, open-ended questions explored the factors most powerfully influencing these assessments.⁴

St. John, U.S. Virgin Islands

Approximately two-thirds of St. John's land area and 5,650 acres of submerged lands lie within the authorized boundaries of the Virgin Islands National Park (established 1956) and 12,708 acres of submerged lands comprise the Virgin Islands Coral Reef National Monument (established 2001). Both protected areas are under the jurisdiction of the U.S. National Park Service. In



Map 1. Recent map of the Virgin Islands National Park and the Coral Reef National Monument. (Courtesy National Park Service)

1976, the park was designated a biosphere reserve by UNESCO. Each year over one million tourists visit the park, many of them cruise ship passengers, to appreciate the beaches, coral reefs, flora and fauna, trails, and historical structures. The resident population of about five thousand is diverse, with about a third native St. Johnians,⁵ a third from the continental United States, and

another third from other Caribbean islands.

St. John's population and land use patterns have changed over time. Human settlers reached St. John between 2000 – 1000 BCE and by 1200 CE the Taino people occupied St. John. By 1520 CE, traces of the Taino had vanished, likely killed or forced off of the island by European expeditions to the region. In 1718, the uninhabited island was claimed by Denmark and by 1730 had been divided into 100 plantation holdings with just over 1000 enslaved people from the western coast of Africa. Three years later, approximately 150 of the enslaved people planned a revolution and succeeded in taking over the island. For three months the former slaves held the island; when it was retaken by colonial forces, many of those involved in the revolution were killed or committed suicide. Plantations and slavery persisted until the mid 1800s, when a variety of factors brought the system to its end. At the time of Emancipation in 1848, there

Relying on trust and reciprocity between neighbors and family alike, people would share pieces of land, crops, childcare and other forms of labor, constructing a basis for the informal, primarily non-monetary, economy that drove the St. Johnian society.

were over two thousand enslaved people on St. John and a community comprised primarily of free persons of color who lived on the east end of the island.⁶ Native St. Johnians today trace their heritage to these people.

After the collapse of the plantation system, a new era of land use on St. John emerged. It included a diversified agricultural economy, small-scale forest industry (e.g. bay leaf har-

vesting and charcoal production) and the development of cattle estates.⁷ Although the majority of land remained in the hands of a few persons and families, the emerging St. Johnian community acquired small lots of land purchased, transferred, or gifted from the old plantations. They cultivated

home gardens, crafted sailing vessels, became skilled fishers and maritime traders, raised goats and cattle, made charcoal, picked and manufactured bay leaves, and made and sold baskets. This system continued through the transfer of the islands from Denmark to the United States in 1917 and lasted until the island's transition to a tourism economy in the 1950s.

One of the prevalent aspects of this time was the barter system that developed as people cultivated provision grounds and raised animals. Relying on trust and reciprocity between neighbors and family alike, people would share pieces of land, crops, childcare and other forms of labor, constructing a basis for the informal, primarily non-monetary, economy that drove the St. Johnian society. It was very common throughout the time period leading up to the establishment of the National Park, for people to access or borrow land from large landowners and other neighbors, usually in exchange for some amount of labor or share of their produce, in order to grow crops, graze livestock, or cut wood.⁸

Although support for a protected area on St. John began as early as the 1930s, no official arrangements were made until conservation-minded businessmen Frank Stick and Laurence Rockefeller became involved in the early 1950s. After purchasing just under 1500 acres on the island, Stick turned his attention to developing the area as an upscale development and marina but soon abandoned that idea to create a national park. He enlisted the support of Rockefeller, who had already purchased a 650-acre resort area on the island. Rockefeller was interested, particularly because he wanted to prove that economic pursuits and conservation could go hand in hand.⁹ Stick already had prior experience linking conservation with capital investments.¹⁰ Stick then secured options on the five thousand acres needed to establish a park. Some of the

land was donated and the remainder was purchased with financial support from Rockefeller. Most of the acreage was acquired from a few non-St. Johnian large landowners with many local families declining to part with their land. The park was dedicated December 1, 1956, the same day Rockefeller opened a remodeled Caneel Bay Plantation resort, a luxurious but simple hotel situated within the boundaries of the park.¹¹



Picture 1. The National Park Service Headquarters (shown here) is located in Cruz Bay, the main town on the island. (Courtesy Crystal Fortwangler)

Our interviews with St. Johnians revealed concern about the period leading up to the establishment of the park. Many locals felt dispossessed of lands that they had always been able to use to raise crops, gather useful plants, graze their livestock, or make charcoal. Many reported that they were led to believe that the park would be merely a place for recreation and that they would always have access to the land. Concepts of access clearly varied from what park creators were proposing and what locals perceived at the time. It was those retaining small plots who depended upon access to the large estates that likely experienced the greatest impact and felt most betrayed by the park's policies.

Although many St. Johnians were excited about the creation of the park and the job

opportunities associated with the opening of the resort, the enthusiasm was soon curbed.¹² By 1958 a local politician is quoted in the *New York Times*: "We have not only been sold down the river, we've been sheared first."¹³ Some people's properties were completely surrounded by park lands, without legal easements for ensured access, and people became aware of conflicts between themselves and park managers regarding access to park lands. Questions about property lines still exist today and numerous boundaries are still not surveyed. In retrospect many local residents view the creation of the park as a move by powerful business interests working in concert with the federal government to secure St. John for their own benefit. This sentiment was expressed soon after the park was created and continues today. One native St. Johnian explained, "The park is not here for you. The Park is a money-makin' business... It was deception from the inception." A local Senator said as much in 1958: "if you will look carefully at the map you will see a millionaire's lodge protected by the Federal Government."¹⁴

The development of the park and resort along with the emergent tourism industry on St. Thomas encouraged St. Johnians to move away from land-based and fishing occupations and into wage labor jobs within the tourism industry. In the early 1960s the population of the island began to expand dramatically as people from other Caribbean islands and the United States migrated to St. John to start new lives, find employment, and establish businesses. Today the island has about 5000 persons. In a period of fifty years (1950 – 2000), the island witnessed a 460% increase in population. In 1950, almost everyone on St. John was born on the island; today most are not. Most recently, St. John has become a favorite location for those building luxury or second homes, vacation villas, and dream houses. For 2003, the Multiple Listing

Most St. Johnians recognise that the park drives much of the local economy and helps maintain the rural feel of the island.

Service for St. John shows the average sale price of 55 homes sold as \$960,000 and the average price of 155 land properties sold as \$377,000.

While most St. Johnians recognise that the park drives much of the local economy and helps maintain the rural feel of the island, there is

a wide range of opinions held between and within the diverse communities on the island about these areas and the National Park Service. Opinions range from whole-hearted support to staunch opposition, and actions in relation to the protected areas are as varied. Although only a third of St. John's population trace their roots to the pre-park era, the island's recent native history and culture in many ways still dominate local viewpoints toward the park, particularly negative ones. In the following section we explain how and why this should matter to protected areas managers.

Perceived poor cultural understanding of PA managers: a predictor of local opposition

Over 200 interviews with St. John residents show trends that shed light on why history and culture matter to resource management. In Stern's study, 115 respondents, both native and immigrants to the island, were asked to rate their overall level of satisfaction toward the park on a scale from one to ten, ten being the best. They were then asked to explain why they responded in the ways that they did. Figure 1a and 1b show the most common explanations for

these attitudes. The most commonly reported explanations for negative attitudes toward the park were those of cultural incompatibility. People commonly reported that the park management made very little effort to fit in with island culture¹⁵ and often exhibited blatant disrespect for local people. We will address only some of the roots of these complaints in this short report.

Figure 1a. Most commonly reported positive influences on local opinions of VINP

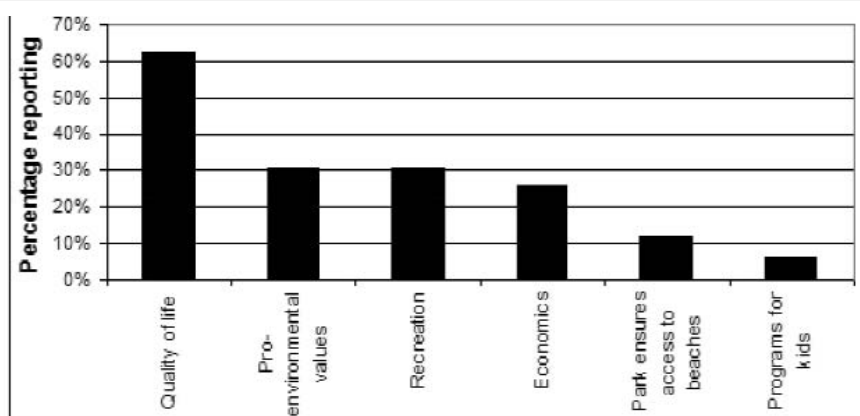
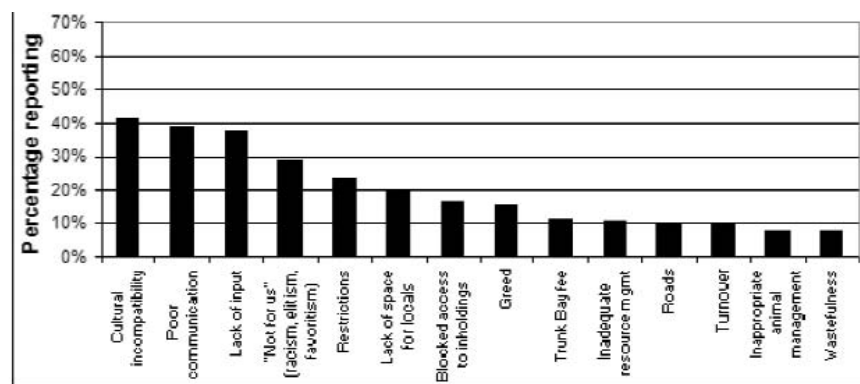


Figure 1b. Most commonly reported negative influences on local opinions of VINP



Respondents were also asked to rate their perceptions of how well they believed that park officials understood the local culture on the island on a five-point scale. Fifty-five percent of native St. Johnians and forty-two percent of non-native residents responded that they didn't understand it at all, while only five respondents suggested that they

understood it very well. In these and in additional interviews, many people reported that they were actually offended by the lack of cultural history included in park interpretation.

The scripted interviews also revealed that the most significant predictor of actions carried out by locals in opposition to the park was their level of trust in park managers. "Opposing" actions were measured as instances of intentional resource damage or illegal harvesting, lawsuits against the park,

Respondents who believed the park managers to be fair and honest with local residents were the least likely to commit such actions.

public campaigning against the park, and/or active protests. Respondents who believed the park managers to be fair and honest with local residents were the least likely to commit such actions. Using the trust variable alone, we can predict with over 81% accuracy,

using binary logistic regression, who within the sample is committing these actions and who is not (see Table 1).

tions of cultural understanding described above ($r = .592, p = .000$). In other words, those who felt the park demonstrated higher levels of cultural understanding tended to demonstrate greater trust of park officials.

This trend is especially significant because the trust variable proved a significantly better predictor of local opposition to the park than many other measurements commonly assumed to be among the most important predictors of local responses to protected areas, including natural resource use and access restrictions, economic benefits or disadvantages associated with the park, recreational factors, and others.¹⁷ This suggests that building meaningful personal relationships and demonstrating cultural respect may in fact be as important a strategy for park outreach as providing tangible benefits to local populations.

Building meaningful personal relationships and demonstrating cultural respect appears as important a strategy for park outreach as providing tangible benefits to local populations.

Table 1. Binary logistic regression model predicting active opposition to Virgin Islands National Park

Observed	Predicted		Percentage Correct
	0	1	
OPPOSE 0	67	12	84.8
1	9	24	72.7
Overall Percentage			81.3
Variables in the equation:		Significance	
TRUST		p = .001	

Only 25% of the sample reported that they trusted park managers entirely, while nearly half of the sample suggested that they mostly or entirely distrusted park managers.¹⁶ Five-point-scale measurements of trust for park managers were highly correlated with the measurements of percep-

Detailed interviews with St. John residents by both researchers revealed that trust is largely contingent upon common ground between park managers and the people living on the island. While island residents who have come from the mainland United States tend to exhibit slightly higher levels of trust in park managers, many also reported strong distrust. Amongst those non-natives who exhibited active opposition toward the park,

about half cited the historical mistreatment of local people by the park and other entities as one of the reasons for their distrust. We thus see strong ripple effects of cultural rifts from one group to another.

These results show clear linkages between local history, cultural understanding, trust,

and tangible negative impacts upon park resources.¹⁸ In the following section we discuss specific events and park management strategies that have influenced responses by local people and highlight some points that are particularly salient to protected areas management in general. We focus upon themes of cultural interpretation, exotic species management, communication, and conflicts between park managers' and locals' sense of place.

Representing histories

St. Johnians' history is embedded within the park's landscape. Much of that recent history, however, has not found its way into park programs.¹⁹ The overall landscape studied and interpreted does not cover the same ground as the one lived and experienced by recent generations of St. Johnians. The history of bay rum and charcoal production, maritime livelihoods, and cattle estates is much less visible in park interpretation than more distant histories, such as those involving the Taino and plantation societies.²⁰ Moreover, the public has not historically had easy access to the documents tracing significant changes that have occurred on St. John as a result of the park. Until recently, a wonderful collection of photographs and interviews of St. John's more recent past collected since the park's establishment lay rather unorganised in file cabinets in park offices and storage facilities.²¹ Deeds of park lands are as well difficult to locate.

One exception to the dearth of interpretation of recent history in the park is an annual event that takes place at the Annaberg sugar plantation ruins.²² For most of the year, the site hosts basket-making and cooking demonstrations and maintains a small educational garden.²³ The Folklife Festival – showcasing the island's traditional arts and crafts, herbal remedies, food, music, gardening, storytelling, and masquerading, takes place

three days out of the year during Black History Month. St. Johnians consistently portrayed this event in a positive light, often describing it as the most positive aspect of the park. Interviews with residents unanimously show that they would like this programme to expand (even if they found room for some improvement). Many St. Johnians also think it could provide additional employment for local people. The fact that it only happens once each year is frustrating to many St. Johnians.



Picture 2. A native St. Johnian demonstrates basket-making for visitors at the Folklife Festival. A locally made doll is on the far left. (Courtesy Bruce Schoonover)

Both the cultural resources protection and interpretation divisions are understaffed and underfunded, forcing difficult decisions in the allocations of money, time, and effort. In addition, because there is an urgent need to document and preserve deteriorating historic structures from the plantation era and vanishing pre-historic Taino beach sites, the archaeological investigations have been focused upon these. While these efforts and the interpretation of past eras are important to St. Johnians, our interviews show that people are also concerned that recent eras do not receive as much attention. Failing to provide culturally relevant interpretation con-

tributes to divisiveness and local discontent for the protected areas. It leads to perceptions that the park does not care about local people and fuels the distrust that characterises today’s relations between the park and island residents. It complicates park relationships with native residents, exacerbating feelings that the park is not for them or connected to them. Failing to adequately incorporate histories relevant to local residents can be significant and symbolic.

The park is beginning to increase the attention given to the post-emancipation era, particularly the twentieth century. For example, the Chief of Interpretation has made an arrangement for a cultural anthropologist to help prepare a guiding document focused on the interpretation of land use within the park during the twentieth century and the communities who lived there. In addition, the Cultural Resources Manager helped prepared a proposal that in part addresses twentieth-century land use at a major site in the park. Additional possibilities include adding interpretive signs or demonstrations regarding bay rum production, boat making, charcoal making, or cattle rearing throughout the park and commissioning park resource studies that include more extensive treatments of recent histories.²⁴

Native St. Johnians, like the original residents near so many parks, have sacrificed for the benefit of all people who enjoy these parks. While, of course, many local people have benefited from the park’s creation as well, many more feel that the costs they have endured have long been swept under the rug. Protected areas wield tremendous power as they decide which historical periods they wish to preserve or highlight.²⁵ A living history that celebrates the life and times of St. Johnians could celebrate their contributions and sacrifices for the preservation of

this land, making allies out of many who consider themselves opponents.

What species belong here?

Just as park managers interpret histories, they have the ability to determine which species of plants and animals— and how many— should exist within the park. Official park communications explain that invasive “non-native” species must be reduced to protect the “natural” or “native” habitat, including federally listed endangered species, such as the St. Thomas Lidflower (*Calyptanthes thomasiana*) and the Prickly Ash (*Zanthoxylum thomasianum*), and one of the best remaining representative examples of Caribbean dry tropical forest. The fauna with reduction programs include mongoose, cats, rats, feral pigs, and goats. Donkeys do not have a reduction programme but are also considered a threat to native species.²⁶ Proposals for the control of non-native invasive flora are in the planning process. Some of the flora and fauna, particularly goats, pigs, and donkeys are culturally significant because of their historical uses, particularly during the post-emancipation period.

Although locals often understand that the park needs to control non-native species because they damage native ones and lack natural predators, public perception overall is that the non-native species—culturally significant ones—are targeted in an attempt to return the island to a pre-Columbian landscape. A 1987 report on land use within the park offered a similar observation, noting that “much of the landscape has been deliberately managed to a wilderness state that obscures its cultural dynamic.”²⁷ Moreover, many St. Johnians perceive that the park has chosen certain species over others without regard for local customs and traditions. Some see this as part of an inconsistency in park management decisions to protect some species and destroy others. For example, sweet lime (also known as

limeberry, a local favorite) was targeted for removal at a beach that locals frequent. Meanwhile, almost all of the interpretive signs on the famous Reef Bay Trail in the park contain natural history information celebrating exotic species and explaining their presence on the island.

Park managers are guided by National Park Service Management Policies, which provide for the protection of cultural and historic landscapes and the protection of native species. Managers recognise the merit of incorporating culturally relevant species into park landscapes but they must also adhere to federal laws (e.g. the Endangered Species Act). Thus, while park service mandates are to pursue the protection of native species by reducing the non-native ones, they also promote the historic and cultural importance of the non-native species through a cultural landscape program.

Park managers then find themselves in a balancing act. However, it is not merely an *ecological* balance that is important to seek. The park could more actively and clearly emphasise a balance between the native and non-native species and the cultural and historic landscapes in which they are situated. Another option would be to re-evaluate the process of deciding what is or is not native to St. John, perhaps stretching the interpretation beyond strictly ecological criteria. Moreover, the park could temper public frustration through public acknowledgment of the significance of these culturally relevant species.

By acknowledging and even celebrating the cultural role of some of these species the park might treat them as valued local species instead of harmful invaders. By suggesting this, we do not mean to imply that St. Johnians or others

value donkeys picking through their trash or goats nibbling their flowers. It also does not mean that we should value the damage these species cause to other species. It means that these species can be valued in both historical and cultural ways and at the same time be controlled within the park. The emphasis could be on promoting the integration of these species into the park landscape and at the same time providing for the protection of federally and territorially listed endangered species. This might be pursued by including goats, hogs, and donkeys as part of certain park landscapes

Many residents refuse to attend meetings, at times as a form of protest. Many who do attend do so to register opposition to whatever park propositions are discussed. [...] More than half of our interviewees suggest that officials should communicate more often in a less formal manner with local residents.



Picture 3. Feral donkeys are often seen walking along the roadsides, many of which are located within the park. Taking home a photo of a donkey is a favorite tourist pastime. (Courtesy Crystal Fortwangler)

(such as post-emancipation cultural landscapes)²⁸ but not others, or limiting these animals to an interpretive site. Without attention to the cultural significance of

these species, the park risks further alienating a population that already feels its sense of place and ownership eroding. A recent positive step in this direction was the inclusion of donkeys and goats in a park sponsored parade float emphasizing the human history of the island.²⁹

Culture and Communication

Park communication with the public also suffers from inattention to historical and cultural matters. Most commonly, the Park Service communicates through press releases, requires formal written responses, and holds public meetings, as required by the NEPA process. Many residents refuse to attend meetings, at times as a form of protest. Many who do attend do so to register opposition to whatever park propositions are discussed. Both sets of research show that respondents overwhelmingly recommend that the park change its style of communication.³⁰ "Come out and mingle," suggested one native St. Johnian. St. John is a small place. Locals want to see park officials talking with locals on the streets, at community gatherings, and playing dominoes at local hang-outs.³¹ Another roadblock to developing shared trust between the community and park is the frequent turnover of the Superintendent position, a common practice in the National Park Service. Many expressed feelings of futility in building personal relationships with someone who will be leaving soon.³²

The formal and infrequent modes of communication employed by the park have led to strong perceptions that local involvement in park decisions is not genuine.³³ A recent example provided by St. Johnians is the perceived lack of communication throughout the process leading up to the establishment of the national monument. Many believe that meetings held by the park are just for show. The Park Service has done little to contest these claims.

Comments are taken, and park officials report that they are utilised in planning processes, but no evidence is provided to local residents as to why certain comments were acted upon and others not. People feel as if the curtains close at the end of a meeting and never re-open. Respondents expressed that they did not expect the park to incorporate everything they would like, but they would like an honest effort to respond to concerns with explanations. The fact that the park does not provide post-meeting follow-up leads people to believe that they have been disrespected. Respect – as one would expect – is an important factor in creating positive relationships.

Many St. Johnians view the park historically as yet another largely white (particularly in management), external entity that has usurped local sovereignty, as have prior colonial entities. At times, the Park Service reinforces these sentiments. For example, the initiation of entry fees at Trunk Bay, a popular beach, without exceptions for local residents has caused considerable angst.³⁴ Although the fee is small, the principle that locals should pay to visit a beach their families have used freely for generations is a direct insult to many. The closing of old trails and roads has generated similar responses. The building of a gate at an access point to privately held lands encompassed by the park a few years ago may be an extreme example of such affronts. The gate was closed to halt illicit activities allegedly occurring in the area. Public debates concerning access to inholdings and the closing of roads have been ongoing for many years. The unannounced closing of the gate re-ignited a passionate flame of resentment.³⁵ In turn, many St. Johnians

Decisions such as charging locals park fees or creating the recent monument are often finalised at a higher level, leaving park managers to deal with the local consequences.

offered cautious optimism when the new superintendent recently removed the gate altogether.

The make-up and hierarchy of park staff also impacts local viewpoints and reactions. While the park hires a considerable number of local residents, some within the upper echelons of the park's hierarchy, park superintendents have been from elsewhere with perhaps one exception.³⁶ Many enforcement rangers and most natural resource managers are also from the mainland. Most people believe that decisions made regarding St. John's protected areas are made at the regional office of the Park Service in Atlanta or in Washington, DC. Indeed, decisions such as charging locals park fees or creating the recent monument are often finalised at a higher level, leaving park managers to deal with the local consequences. The relationship between NPS administrative levels makes it difficult to pin down responsibility for certain decisions, which frustrates locals. This further reinforces feelings of local powerlessness and prompts discussions about neo-colonialism amongst local residents.

Locally-hired park staff also play a role in the relationships between the park and locals. Because the park is viewed by many as predominantly foreign, formal, and largely unapproachable, they often rely upon locally-hired people as key brokers of information about the park. When these employees are not brought into the overall park planning, it only solidifies perceptions about the lack of genuine local involvement and cultural sensitivity exhibited by park managers. Both of our studies revealed that minimal consultation with local hires (and Virgin Islanders in general) in the management planning and decisions of the park has a great impact on relationships between the park and community. Based upon patterns of information move-

ment on the island, however, it may be these individuals, positioned at the critical nodes of communication, who could probably best articulate the common ground between the park's interests and those of the local population. Recently, the park hired a St. Johnian to develop a community outreach and media relations plan. This position could provide a venue through which to address some of the issues raised here.

Conclusions

We have highlighted how the concept of land on St. John has changed from something that is shared to something that is owned and restricted. Historically, the lands on St. John were loaned, borrowed and shared locally as needed amongst family, neighbors and different-sized land holders. National Parks, however, are owned in common by everybody in the United States. It should not be surprising that native St. Johnians view protected areas on the island as more of a taking than any sort of giving for the local residents – even if they recognise some benefits. St. Johnians and the protected areas themselves would benefit from a renewed sense of ownership in what they once considered their own.³⁷

St. Johnians have a special relationship with the island— a special sense of place, one different than others who have moved to the island. Sense of place is the coming together of memories, experiences, languages, visions, stories, social relations, and identities.³⁸ It is a merging of one's individual and collective pasts, presents, and futures developed over time in places. Building a sense of place is an individual and cultural process of experiencing and interacting with places with one's body and through social engagements. It is, for example, knowing which tree people gathered under on the island and why – and having a shared or similar understanding

about it, a shared and special relationship to that place, even if you never gathered there, even if the tree is no more. Such trees have or still exist within the boundaries of the park. So does much of St. Johnian history.

Sense of place has a profound influence on how St. Johnians evaluate the park, the recently designated national monument, the Park Service and its support groups. St. Johnians know an island with and without a park. They may articulate an opinion about the park but it is not isolated; it is situated within a web of human and place-based relationships. The protected areas are intertwined with St. Johnians' cultural and social worlds—they are "cultural entities."³⁹

We have illustrated the connections between cultural and historical understanding, trust and the maintenance of resources within protected areas on St. John. For instance, appropriate cultural and historical interpretation and communication are very significant in developing the relationships upon which local preservation depends. And neglecting certain aspects of local contexts can lead to impaired management situations.

These are common themes in many protected areas around the world. The primary focus of park management in recent years upon natural resources within protected areas is understandable, as that is the primary mission of many protected areas. However, the continued existence of these resources is contingent upon the human institutions that surround them. Our results show that park planners and managers should place greater emphasis on viewing park neighbors as people who care about the places in which they live and have emotional connections to the landscapes and histories encompassed within protected area borders. In the

human-dominated landscapes that surround and infiltrate most protected areas, the successful protection of resources is dependent upon both sound natural resource management and sound management of social relationships. For the latter, careful analyses of the social contexts in which parks are situated appear indeed necessary. Programmatically incorporating such analyses can lead to better relationships with local communities, better visitor experiences, and better resource protection in the long run. Ultimately, such analyses should guide what the PA is all about.

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Notes

- 1 Brechin *et al.*, 2003; Colchester, 1993.
- 2 Terborgh and Peres, 2002.
- 3 Alcorn, 1993; Metcalfe, 1995; Zimmerman *et al.*, 2001.
- 4 Stern interviewed 44 native St. Johnians, 46 people originally from the U.S. mainland, and 25 from elsewhere. Fortwangler interviewed 46 native St. Johnians and 44 people originally from the U.S. mainland. There is only a small degree of overlap in persons interviewed.
- 5 We use the term "native St. Johnian" here to refer to persons whose families trace their ancestry on the island back many generations and who would be described in relevant literatures as Afro-Caribbean.
- 6 See Armstrong (2003) for a detailed account of this unique community living on the east end of island.
- 7 The cattle estates were owned by a few families of mixed African and European descent with locals working occasionally as laborers; the number of cattle reached a peak in 1930 with fifteen hundred head. For full account of land use history on St. John see Tyson 1984.
- 8 See also Tyson (1984) and Olwig (1985).
- 9 Winks, 1997. Rockefeller was also interested in helping local people get jobs. He thought of the park as a way to "save the island from exploitation and help islanders at the same time" (Thruelsen, 1955).
- 10 Stick was a former artist-illustrator who later turned to the real estate business and became a successful developer of NC beach-front property around Nags Head. He worked with the National Park Service to establish Cape Hattaras National Seashore (1953) and gave land for Wright Memorial in the 1920s.
- 11 See O'Neill (1972) for a fuller treatment of the beneficial relationship between Caneel Bay and the park. See Olwig (1995) for a detailed discussion of how tourism and the park have impacted the St. Johnian community.
- 12 Olwig & Olwig, 1979.
- 13 Fellows, 1958:10.
- 14 Ibid.
- 15 Many spoke of the park as having a military style of management and of top park officials' unwillingness to show themselves at local hang-outs or talk casually to people on the streets. Invariably, people report that when more personable superintendents have been in charge of the park, relations have improved considerably.
- 16 Roberts (2003) also finds a general lack of trust towards the park service on St. John, noting that such lack of trust will preclude any success of an outreach effort (re: conservation of marine

- resources). She writes, "there is absolute recognition [by park staff] that *lack of trust* is a major factor that yearns for mending" (11).
- 17 When trust is included in any model along with these other variables, only the trust variable proves significant at the 95% confidence level. When rational cost-benefits assessments are used in place of the trust variable in the model, the overall predictive power of the model drops to 74.6%.
 - 18 Higher levels of trust and cultural understanding were also correlated with positive actions toward the park, measured as donating money, volunteering, or defending the park in public arenas. The best predictors of positive actions, however, were perceived levels of local empowerment and perceptions about the attitudes of one's peers. Respondents with perceptions of greater local input into park decisions and of higher percentages of peers with positive attitudes were more likely to actively support the park.
 - 19 Roberts (2003) also points out that the interpretive programs at VIIS could gain from an external evaluation, asking "what's missing" regarding interpretation of the "untold stories."
 - 20 There were earlier attempts by interpretive rangers to focus on the island's late 19th and early 20th century subsistence era, but these efforts were not effectively institutionalised.
 - 21 The park recently completed a collections conditions survey and a collections management plan.
 - 22 In addition to the Annaberg festival, this past year the park (with funding from the Friends of the Virgin Islands National Park) worked with a local theatre company to offer a play based on the life and times of a well-known St. Johnian. The play is held in the park every week and attended by locals and tourists. Early reports suggest it is well-received by the St. Johnian community.
 - 23 Additionally, the Friends of the Park recently started a docent program, five days per week during the peak tourist season.
 - 24 The park has previously commissioned studies that include the post-emancipation era. However, they provide minimal attention to the years after 1917. Exceptions are Tyson 1984 and 1987 but these have a very limited distribution.
 - 25 See also Watt (2002).
 - 26 There have been plans proposed for donkey management, such as one prepared by the Feral Animal Task Force on St. John in the early 1990s.
 - 27 Tyson, 1987:16.
 - 28 In 1997, a Park Service regional office identified a list of eight preliminary cultural landscapes for the Virgin Islands National Park. At the time, the park did not comment on the list. The park could pursue this option and encourage post-emancipation landscapes to be included on the list.
 - 29 The idea for such a float was initiated by St. Johnian park employees, an important point relevant to the next section of paper.
 - 30 See Roberts (2003) for recommendations on how the VIIS could improve its communication strategy.
 - 31 Superintendents, for example, have engaged with the St. Johnian community in different ways. St. Johnians point to only a few superintendents who regularly mingled and personally engaged the locals. The current superintendent has made a great effort in this regard.
 - 32 We agree with Roberts (2003) that trust between the community and park would improve if park managers remained longer than a few years.
 - 33 This is consistent with the findings of anthropologist Stephen Koester in the mid-1980s. He concluded that a large part of the conflict between local fishermen and the park stemmed from the "almost complete exclusion of fishermen from any meaningful role in the national park." He argued that to "build a cooperative relationship" the park must pursue a management structure "based on participation rather than exclusion" and a management policy that "extends decision making power and planning to include traditional resource users and residents" (Koester 1986:20-21).
 - 34 This is a general policy of the park service. Because parks are owned equally by every citizen of the United States, locals generally receive no special privileges.
 - 35 The superintendent at the time later regretted not discussing the gate with residents before locking it (page 6 of Virgin Islands Daily News, May 10, 2001).
 - 36 One superintendent did spend childhood years on St. John and worked for the park as a young adult. Some people, however, did not consider him to be truly local, having been born elsewhere. In order to become a superintendent, an employee is expected to move from unit to unit, securing a range of experiences. While there have been a handful of Virgin Islanders who have done this, most people are not interested in leaving the islands in order to pursue this path.
 - 37 Park policy regarding "traditionally-associated peoples" should apply to native St. Johnians. Park recognition of this status would ensure a greater emphasis on the types of communication most St. Johnians would like to see, acknowledging their traditional cultural connection with the landscape that pre-dates the park and thus their legitimate stake in decision-making processes.
 - 38 Sense of place and relationships to places have been approached from numerous disciplines such as anthropology (Feld and Basso, 1996; Low, S. and D. Lawrence-Zúñiga, 2003), archaeology (Tilley, 1994), geography (Relph, 1976; Tuan, 1977), and philosophy (Casey, 1996).
 - 39 Infield (2003) discusses national parks as "cultural entities", arguing that conservation will be strengthened if protected areas are represented in cultural terms.

La propriété collective et la mobilité pastorale en tant qu'alliées de la conservation— expériences et politiques innovatrices au Ferlo (Sénégal)

Adama Ly et Maryam Niamir-Fuller

Résumé : La légitimité d'accès aux ressources naturelles renouvelables et la responsabilisation des communautés dans leur gestion déterminent une grande partie du comportement de ces communautés vis-à-vis de la nature. Dans ce qui suit plusieurs expériences et politiques seront analysées pour le cas du Ferlo au Sénégal — depuis la propriété collective traditionnelle des sociétés pastorales jusqu'à la compétition « moderne » entre différents utilisateurs et utilisations possibles. Des options d'utilisation durable de ces ressources et de conservation participative de la biodiversité seront par la suite examinées. Ces options sont soutenues par un projet FEM-PNUD qui a promu la reconnaissance d'un nombre de Réserves Naturelles Communautaires et d'Unités Pastorales (UPs) gérées par des communautés transhumantes avec des plans de gestion flexibles et bien enracinés dans les connaissances et savoir faire traditionnels. Ces options se fondent sur la *restauration*, à la fois, de la propriété collective traditionnelle des ressources naturelles, de la transhumance pastorale et de la migration saisonnière de la faune (par une meilleure connectivité entre les aires protégées qui constituent leurs habitats principaux).

La propriété collective traditionnelle et l'utilisation durable des ressources naturelles

Traditionnellement en Afrique, et au Sénégal en particulier, la terre n'a jamais été une propriété individuelle, même si son usage individuel a été garanti et contrôlé par les collectivités locales.¹ La terre a toujours été une propriété familiale ou communautaire, utilisée selon des règles de bonne gestion reconnues et respectées par tous. Ainsi, le Ferlo était jadis subdivisé en un ensemble d'unités écologiques comprenant des mares et des pâturages. Chacune de ces unités spatiales était la propriété collective (*hurum*)² d'un groupe de pasteurs dont la légitimité d'accès aux ressources naturelles était reconnue par tous. Ces *hurum*, qui aujourd'hui, nous appellerions Unités Pastorales traditionnelles (UPs), étaient exploitées selon des règles de bonne gestion des ressources fourragères et hydriques. Les bénéficiaires respectaient ces règles avec un système de rotations spatio-temporelles centrifuges et progressives sur un rayon approximatif allant de 5 à 10 kilomètres autour des mares principales, au fur

et à mesure que le fourrage plus proche de la mare devenait rare. Ce système d'utilisation durable des ressources pastorales était complété par la transhumance des grands troupeaux une fois que les mares commençaient à tarir. Les exploitants des UPs traditionnellement reconnues pouvaient accorder, négocier ou refuser aux étrangers le droit de pâture sur leur territoire. Ce système de gestion communautaire et d'utilisation durable des ressources naturelles était de règle jusqu'à l'avènement de l'ère coloniale. Dans la pratique, la gestion des *hurums* obéissait aux règles de réciprocité d'accès aux ressources au profit de diverses communautés étrangères au fur et à mesure des besoins. Ces règles fonctionnaient même durant les périodes de grande sécheresse, quand la rareté des ressources fourragères et hydriques accentuait la compétition pour l'usage des ressources. Les règles de réciprocité d'accès des groupes de pasteurs aux ressources d'un *hurum* à l'autre constituaient ainsi un exemple de compromis et de coopération au profit de toutes les communautés et de l'environnement.



Figure 1 . Pendant l'hivernage, autant les bovins que les ovins et caprins, le pâturage centrifuge autour des mares assure une utilisation rationnelle des ressources naturelles des *Hurums*. (Courtoisie PGIES)

De la vision coloniale de la propriété individuelle au classement des terres collectives et aux tentatives de sédentarisation des éleveurs

Durant la période coloniale, suivant la logique de la propriété individuelle de la vision européenne, la propriété collective fut ignorée et toutes les terres collectives « sans propriétaire avec immatriculation légitime » furent déclarées « vacantes et sans maître ». ³ Dès lors, à partir de 1904, ⁴ démarra le classement au profit de l'Etat colonial de la majorité de ces terres en Parcs, Forêts Classées et Réserves. Ce système de classement fut établi avec un arsenal de textes juridiques, d'institutions et de corps de

Ce type de tragédie environnementale est une « tragedy of the open access » — la conséquence directe du fait que les communautés qui avaient des droits coutumiers sur les terres ont été dépossédées.

répression au nom de la protection et de la conservation des ressources naturelles. Les communautés qui avaient conservé et utilisé durablement ces ressources naturelles communautaires de génération en génération deviennent des « voleurs » contre qui ces mêmes ressources devaient être protégées. ⁵ Bien évidemment, les populations se sentirent expropriées. En plus, dans un contexte de faibles

moyens de contrôle de ces ressources naturelles par l'administration, les règles de bonne gestion se transformèrent vite en compétition pour leur utilisation. ⁶ Ainsi, la dégradation des terres et des ressources naturelles fut sans précédent. Ce type de tragédie environnementale, surnommé « *tragedy of the commons* » ⁷ et constituant plus précisément une « *tra-*

gedy of the open access », est la conséquence directe du fait que les communautés qui avaient des droits coutumiers sur ces terres ont été dépossédées. Ainsi, elles ne pouvaient plus ni négocier avec les étrangers ni leur interdire l'accès aux ressources et encore moins leur imposer le respect des règles de bonne gestion comme c'était traditionnellement le cas.

Face à cette situation, des tentatives de sédentarisation des éleveurs furent opérées avec la création, à partir de 1953, de la Réserve Sylvopastorale des six forages au *Ferlo*. L'idée était de mettre en place un réseau dense de forages, en comprenant environ un tous les 25 kilomètres. Ce transfert technologique fut mal adapté car la plupart des forages tombèrent en panne (c'étaient les populations locales qui devaient prendre en charge le fonctionnement et les réparations, mais ils n'en avaient pas la capacité). Les quelques forages fonctionnels, finirent par accueillir d'impressionnantes concentrations de cheptel, en particulier durant les années de sécheresses. Une dégradation des terres sur un rayon de plusieurs kilomètres s'en est suivie autour de ces forages. Les mauvaises herbes ou même des plantes toxiques comme *Calotropis procera* et *Adenium obesum* remplacèrent progressivement, en certains endroits, les pâturages de qualité. Dans le contexte des sécheresses des années 1970,

le nombre élevé d'animaux sur un terroir limité et la rareté du fourrage et de l'eau conduirent à un fort taux de mortalité du bétail. La sédentarisation, qui devait être une solution à la dégradation des ressources naturelles au Ferlo, finissait, paradoxalement, à exacerber la crise avec des impacts environnementaux et socioéconomiques majeurs. EROS Data Center rapporte ainsi que, depuis 1982, il y'a eu une régression générale dans la composition de la végétation et une diminution de la superficie du couvert végétal, de la productivité, de la capacité de régénération et de la diversité de la végétation du Ferlo. Globalement, la dégradation des terrains de parcours est estimée à 80.000 ha /an.⁸ Les conséquences socioéconomiques se sont manifestées de façon multiple. La forte mortalité du bétail a conduit à la paupérisation des éleveurs, les obligeant à quitter le Ferlo à destination soit des zones urbaines aux alentours desquelles ils gonflent aujourd'hui les bidonvilles, soit vers le bassin arachidier, qui hébergeait déjà, l'une des plus fortes densités de population rurale, pour se faire la main dans l'agriculture sur des sols épuisés, peu fertiles et surexploités. Ainsi, les politiques de développement firent progressivement les preuves de leurs insuffisances et de leurs limites dans la restauration des

conditions d'utilisation durable des ressources naturelles.

Les tentatives de rétablissement de la gestion communautaire avec la loi sur le domaine national et les leçons des projets pastoraux

Avec l'avènement de l'indépendance du pays en 1960, des nouvelles solutions furent également tentées avec la loi 64-46 du 17 Juin 1964, plus connue sous le nom de Loi sur le domaine national. Cette loi, tout en mettant toutes les terres—y compris celles des terroirs villageois—sous la propriété de l'Etat, prévoyait déjà, en 1964, la décentralisation de leur gestion ainsi que celle des ressources naturelles, au profit des Communautés Rurales (CRs). Les premières CRs furent créées en guise de test en 1972. Les CRs, regroupent environ de dix à quinze villages ayant des liens de solidarité, d'alliance et de coopération dans l'utilisation commune des ressources naturelles. Il s'agit d'une étape décisive du processus de la décentralisation vers une restauration de la gestion communautaire des terres et des ressources naturelles renouvelables. Mais la loi précise que la terre appartient à celui qui la met en valeur. Ce critère de mise en valeur est donc la seule porte d'entrée pour une affectation ou pour une désaffectation de la terre. Ce pouvoir est exercé par le Conseil Rural, composé de Conseillers Ruraux élus pour cinq ans, et dont le nombre par village varie proportionnellement avec la taille de la population des villages constitutifs de la CR. Une fois élus par les villages constitutifs de la CR, les Conseillers Ruraux, à leur tour, élisent un Président de la CR. Toutes leurs décisions d'affectation ou de désaffectation de la terre se font sur une base de délibération. Toutefois, pour être valable, la délibération doit nécessairement être approuvée par un arrêté pris par le Sous Préfet concerné. Le Sous Préfet est le représentant local de l'Etat dont la compétence s'étend sur toutes les communes rurales de la Sous Préfecture dont il a en



Figure 2 . Femmes peulh sur le chemin de la vente de lait—une occasion de coopération et d'échange économiques et culturelles. (Courtoisie PGIES)

charge l'administration. Le critère de « mise en valeur » a donc été laissé à l'appréciation subjective des représentants locaux de l'Etat à travers leur pouvoir de valider ou non les délibérations des Conseils Ruraux (control à posteriori sur les décisions). Le représentant local de l'Etat ne peut prendre aucune décision concernant l'affectation de la terre sauf valider ou non les délibérations des Conseils Ruraux. Le pouvoir est ainsi bicéphale : la décision appartient à la Collectivité Locale et sa validation au représentant local de l'Etat.

De ce fait, seulement les agriculteurs ont pu bénéficier d'un accès légal à la terre. Même au Ferlo, où le pastoralisme a toujours été

Seulement les agriculteurs ont pu bénéficier d'un accès légal à la terre... Les pasteurs jusqu'ici, n'ont jamais pu en bénéficier car le pastoralisme n'a jamais été considéré une activité capable de « mettre en valeur » les ressources naturelles.

l'activité dominante, les pasteurs n'ont jamais pu bénéficier, ni individuellement ni collectivement, d'affectation de terre car le pastoralisme n'a jamais été considéré par les autorités locales comme une activité capable de « mettre en valeur » les ressources naturelles. Cette situation tenait principalement du fait que ces autorités locales n'étaient pas des pastoralistes et avaient aussi, une certaine incompréhension envers

les préoccupations des pasteurs. De ce fait, les exploitations agricoles s'étendirent, malgré leurs faibles rendements, jusque dans les parcours de bétail, réduisant ainsi de plus en plus les espaces pastoraux et occupant même les voies traditionnelles de transhumance. Cette situation a obligé les éleveurs à réduire leur mobilité ou à emprunter d'autres voies non traditionnelles et a ainsi conduit à une augmentation des conflits entre agriculteurs et éleveurs. En même temps, on a assisté à la dégradation des sols des fragiles écosystèmes steppiques du Ferlo, suite à leur défrichement, à l'utilisation agricole inappropriée ne tenant

pas compte de la vocation des sols, et à l'augmentation du taux de stockage. Cette réduction de la fertilité des sols créa des sérieux problèmes car elle s'est produite juste au moment où plusieurs villages étaient en train de se sédentariser autour des forages (de 15 puits en 1972, date de la création des deux Réserves de Faune du Ferlo, ce nombre augmenta bientôt à 109 puits repartis entre 106 villages).⁹ Pendant la saison sèche, l'émondage des arbres pour le fourrage ligneux aérien complémentaire devient si systématique que le phénomène conduit, en certains endroits, à la mortalité des arbres. Ainsi, les effets néfastes des réactions de survie de l'élevage traditionnel, de plus en plus confiné sur des terres marginales et en rétrécissement, finit par convaincre, sans aucune analyse rétrospective, que le pastoralisme ne pouvait pas être un critère de « mise en valeur ». A cause de l'iniquité d'accès des systèmes de production au foncier, la tentative de rétablissement de la gestion communautaire de la terre se traduisait principalement, elle aussi en une augmentation des conflits entre agriculteurs et éleveurs.

Certains projets pastoraux avaient pourtant été élaborés et mis en œuvre au Ferlo. Mais, en dépit de l'organisation des pasteurs et de l'encouragement des opérations de déstockage du cheptel par des actions de commercialisation, et même de création d'UPs pour tenter de régénérer les pâturages par des modèles de gestion rotative, les impacts de ces projets furent assez limités tant du point de vue du changement des comportements que de l'amélioration de l'environnement. Les faibles impacts de ces projets étaient liés au fait qu'ils n'avaient pas pu lever les contraintes des causes premières de la compétition des acteurs concernés dans l'utilisation des ressources naturelles. La propriété collective traditionnelle et le système de réciprocités d'accès entre groupes d'éleveurs n'avaient pu être rétablis.

Les options alternatives du Projet de Gestion Intégrée des Ecosystèmes

C'est dans le contexte que nous venons brièvement de résumer que le Projet de Gestion Intégrée des Ecosystèmes dans quatre paysages représentatifs du Sénégal (PGIES), avec l'assistance du PNUD-FEM, a entrepris, sur une base délibérative, l'affectation légale de terres d'une série d'UPs au Ferlo au profit des communautés de pasteurs. La stratégie du projet a visé à la fois le rétablissement des règles traditionnelles de gestion et la mobilité en tant qu'élément essentiel de cette gestion. Ainsi on prévoit des voies migratoires du bétail, mais aussi de la faune, le long du corridor biologique principal entre le Ferlo et le Parc National du Niokolo-Koba. Cette mobilité est essentielle pour une répartition des charges animales aussi bien dans le temps que dans l'espace, gage principal d'une utilisation durable des ressources naturelles des fragiles écosystèmes du Ferlo.

L'alternative représentée par ce nouveau projet de gestion intégrée des écosystèmes démarra, avec son atelier de lancement en fin février 2003, par une large sensibilisation de tous les acteurs concernés sur la question pastorale et la conservation de la biodiversité. Après le recrutement du personnel du projet en mars 2003, le premier semestre fut consacré à une série d'ateliers d'information et de briefing des acteurs concernés tant au niveau national que local. Les ateliers ont concerné les Directions Techniques Nationales compétentes en gestion des ressources naturelles, les autorités administratives comme les Gouverneurs des régions, les Préfets des départements, les Sous-préfets des arrondissements (chargés d'approuver, pour validation, les délibérations des Conseils Ruraux), les responsables des commissions environnement dans les Conseils Ruraux, les agents des équipes pluridisciplinaires locales des Centres d'Expansion Rurale Polyvalents (servant de

conseillers techniques aux Conseillers Ruraux et chargés d'établir les plans des terres affectées), les éleveurs sédentaires et transhumants et les Chefs de Villages.

Au niveau de ces ateliers, des exposés ont été tenus concernant, entre autres : l'évolution du comportement des éleveurs dans l'utilisation des ressources naturelles depuis la gestion collective traditionnelle des *hurums* ; les tentatives de sédentarisation des éleveurs avec leurs impacts sur la dégradation des terres et leurs conséquences socioéconomiques ; la loi sur le domaine national et la marginalisation du pastoralisme perçue à travers ses réactions de survie et ce, dans un contexte d'absence de droits réels sur le foncier ; les limites des projets antérieurs, qui n'ont pas pu résoudre les problèmes à leurs racines. Ces débats communautaires portant sur la problématique pastorale, la conservation de la biodiversité, la lutte contre la dégradation des terres et contre la pauvreté, ont convaincu les parties concernées de la nécessité d'un rétablissement de l'équité des systèmes de production dans l'accès légal à la terre. Cette iniquité était enfin perçue en tant que barrière essentielle à lever pour la conservation des écosystèmes.



Figure 3 . Forage de Péthiel dans le Ferlo Nord. Concentration énorme de troupeaux autour du peu de forage fonctionnel pendant la saison sèche. (Courtoisie PGIES)

Forts des discussions en ateliers et de l'instauration du dialogue entre autorités administratives, éleveurs sédentaires et transhumants, élus locaux et services techniques de base, huit Chefs de Villages ont adressé le 04 Octobre 2003 une demande écrite au Conseil Rural de Oudalaye pour l'affectation d'une UP sise sur le reste de leurs terroirs pastoraux encore non classés et qui constituait une partie d'un ensemble que les villages exploitaient traditionnellement de façon communautaire. Après réception de cette requête, le Conseil Rural fut convoqué en date du 06 Novembre 2003 et délibéra la création de l'UP de Loumbol Samba Abdoul sur une superficie de 38,170 hectares.¹⁰ Avec l'approbation, par arrêté de la Sous-préfecture concernée, 39 ans après l'avènement de la loi sur le domaine national, la barrière institutionnelle qui avait causé tellement de problèmes environnementaux et socioéconomiques venait enfin de tomber. Cette action fut accueillie avec une grande satisfaction par les éleveurs. Cependant, tous les problèmes n'ont pas disparu de ce jour au lendemain. Le nombre accru d'éleveurs et l'accroissement de la taille du cheptel bovin, ovin et caprin sur le nouvel *hurum* reconstitué rend indispensable d'avoir de bons plans d'aménagement et de gestion, capables de répondre de façon flexible aux variations de la pluviométrie et de rétablir de façon négociée avec les éleveurs non membres de l'UP, la réciprocité d'accès aux ressources naturelles de l'UP et de celles en dehors.

L'affectation de l'UP précise qu'elle doit faire l'objet d'un plan d'aménagement avec l'assistance du projet PGIES et dont la mise en œuvre se fera avec une contribution en synergie des autres

projets, des ONG et des structures techniques locales. Ainsi un Plan Communautaire de Gestion et d'Utilisation Durable des Ressources Naturelles de l'UP a été élaboré sur la base de la vision des acteurs locaux. Les initiatives prévues incluent des actions d'ouverture de pare-feux périmétraux et internes pour un meilleur contrôle des feux de brousse, du braconnage et de l'exploitation clandestine de produits ligneux et non ligneux par ses « écogardes villageois ». Elles incluent aussi le re-profilage de mares naturelles pour augmenter leur capacité de stockage des eaux de pluies au profit du bétail et de la faune, la pisciculture dans les mares aménagées, l'apiculture sans feu et l'enrichissement des pâturages avec des espèces herbacées et ligneuses. Outre la matérialisation des limites de l'UP par des pancartes de signalisation et par des bornes, le plan prévoit l'établissement d'une charte locale d'utilisation durable des ressources naturelles sur la base des connaissances locales, comme la gestion centrifuge des ressources fourragères autour des points d'eau. Le plan est complété par des actions de transformation des produits lai-



Figure 4 . Les feux de brousse sont un fléau commun entre le Ferlo et le Niokolo-Koba. Un comité inter sites planifie à niveau éco régionale pour leur éradication. (Courtoisie PGIES)

tiers en lait caillé, beurre et fromage au profit des groupements de femmes et par des actions d'utilisation de foyers améliorés et la promotion de l'écotourisme.

Selon la loi, la terre peut être désaffectée sur la base de constat de mauvaise gestion. Ainsi, la bonne gestion devient une motivation pour les éleveurs et le seul critère de garantie du maintien de l'affectation de la terre. Dans la pratique, d'autre part, la désaffectation est difficile à imaginer car le morcellement d'une UP pour sa répartition entre des éleveurs est impossible car l'affectation est communautaire. Pour bien gérer leur UP les éleveurs ont élaboré une Charte Locale précisant les règles de bonne gestion. Cette Charte Locale, dont le processus d'adoption par tous les acteurs est en cours, est basée sur les connaissances traditionnelles en matière de gestion des ressources naturelles. Le processus d'adoption de la Charte a démarré avec l'examen des dispositions et leur adoption à travers des réunions villageoises. Une fois que tous les villages membres de l'UP l'auront approuvée et adoptée, le processus sera finalisé dans une Assemblée Générale impliquant les représentants des villages l'ayant déjà

Les éleveurs ont obtenu l'affectation des Unités Pastorales ils sont en train d'élaborer une Charte Locale précisant les règles de bonne gestion ... basée sur leurs connaissances traditionnelles

adoptée et des représentants d'autres UPs, avec la présence de pasteurs non membres d'UPs mais bénéficiant de droit d'accès. Après ce processus, il est prévu que le Représentant Local de l'Etat signe un arrêté portant sur toutes les dispositions adoptées de la Charte de manière à les rendre exécutoires. Un processus démocratique prenant en compte des compromis est nécessaire pour

la coopération de tous les acteurs dans le respect des règles établies dans la Charte Locale au profit de l'ensemble des collecti-

tivités concernées.

La Charte Locale précise la volonté de bannir l'installation anarchique des villages dans les UP et d'interdire la création de tout nouveau village dans une UP. Le défrichement, même partiel, pour des usages de cultures marchandes est également prohibé. La Charte précise cela et prévoit des sanctions aux contrevenants (amendes). Des pépiniéristes et des écogardes— chargés de la surveillance du parcellaire de l'UP et du respect des règles de bonne gestion— ont été désignés par les villageois. Le parcellaire découpant l'UP en trois unités a été établi de manière à responsabiliser chacun des trois groupes de villages pour assurer le contrôle des feux de brousse, du braconnage et des exploitations clandestines éventuelles. Des pare-feux ont été ouverts le long des pistes servant de limites de ce parcellaire et le passage d'une parcelle à l'autre est assuré à tous. Des Comités de Gestion existent. Ils comprennent le Président de la Communauté Rurale, le Préfet du département, le Sous-préfet concerné, mais aussi un commissariat au comptes (composé d'un commissaire général et 4 assistants) et une commission suivi et évaluation participative. Cette dernière commission est surtout concernée par les impacts sur le milieu naturel et sur l'économie locale en termes de lutte contre la pauvreté. En cas de saisie de braconniers ou d'exploitants clandestins, les écogardes saisissent l'agent forestier ou des parcs nationaux ou la gendarmerie nationale ou locale qui déclenchent le processus de mise en œuvre des peines pouvant aller jusqu'à l'emprisonnement. Le projet envisage de former ces écogardes dans les Centres de Formation Communautaires du projet et de les munir de signes distinctifs comme des badges.

Les plans d'aménagement et de gestion des ressources fourragères et hydriques

sont censés être revus et corrigés selon le besoin, suivant les changements climatiques et socio-économiques qui affecteront l'UP. Ainsi, en cas de variabilité spatiale de la distribution des pluies sur de grandes superficies, un Comité Pastoral inter-UP sera convoqué pour la révision des plans d'aménagement et de gestion de manière à offrir une « péréquation » entre les zones différemment affectées. Cette péréquation se fera sur la base de paiement de redevances au profit des fonds pastoraux. Globalement, les plans d'aménagement et de gestion des pâturages sont censés être mis à jour chaque année, conformément à la tradition ancestrale des pasteurs.

Les commissaires aux comptes sont chargés de l'application des règles de bonne gestion financière et comptable du comité. Les ressources financières du comité de gestion proviennent principalement de deux sources. La première source est la Taxe d'Abreuvement (TA) instituée localement pendant la saison sèche à partir d'une utilisation des eaux des forages. Cette taxe est de cent francs CFA par mois et par bovin. Elle est instituée systématiquement par tous les comités de gestion des forages avec ou sans UP. Elle est unique aussi bien pour les résidents locaux que pour les transhumants qui utilisent les ressources seulement lors de leur passage. Son paiement s'effectue sans problème depuis sa généralisation à tous les comités de gestion des forages vers la fin des années 1980 aussi bien en dehors des UPs que dans les UPs. Le projet a trouvé sur place l'institution du paiement de cette TA. La deuxième source des fonds du comité de gestion, spécifique cette fois-ci aux seules UPs légalement constituées, est le Fonds Pastoral (FP). Le montant de la contribution des éleveurs à ce fonds spécifique aux UP varie suivant les cas que l'éleveur est ou non membre du groupe communautaire affectataire de

l'UP. Pour les membres du groupe communautaire affectataire, la redevance de contribution mensuelle est de dix francs CFA par bovin et de cinq francs CFA par ovin ou caprin. Quant aux transhumants, cette redevance mensuelle d'utilisation du fourrage dans les UP légalement créées est de quinze francs CFA par bovin et de dix francs CFA par ovin ou caprin. Le paiement de cette redevance, inscrite dans la Charte Locale de bonne gestion, se justifie par l'utilisation par le bétail d'un fourrage de meilleure qualité et en abondance, ce qui motive le paiement de cette redevance aussi bien par les éleveurs membres du comité de l'UP que par les étrangers. Globalement, le montant des recettes s'élève déjà pour l'UP de Lombol Samba Abdoul, à plus d'un million de francs CFA. A terme, d'autres sources comme les contributions des Communautés Rurales



Figure 5 . L'*Hippotragus equinus* (Antilope rouan) est l'une des espèces charismatiques dont le nom local Koba a été utilisé pour l'appellation du parc. (Courtoisie PGIES)

(CR) et les recettes écotouristiques par la vente d'œuvres d'artisanat et l'organisation de manifestations culturelles pourraient constituer des options viables, en particulier aux alentours des aires protégées du Ferlo.

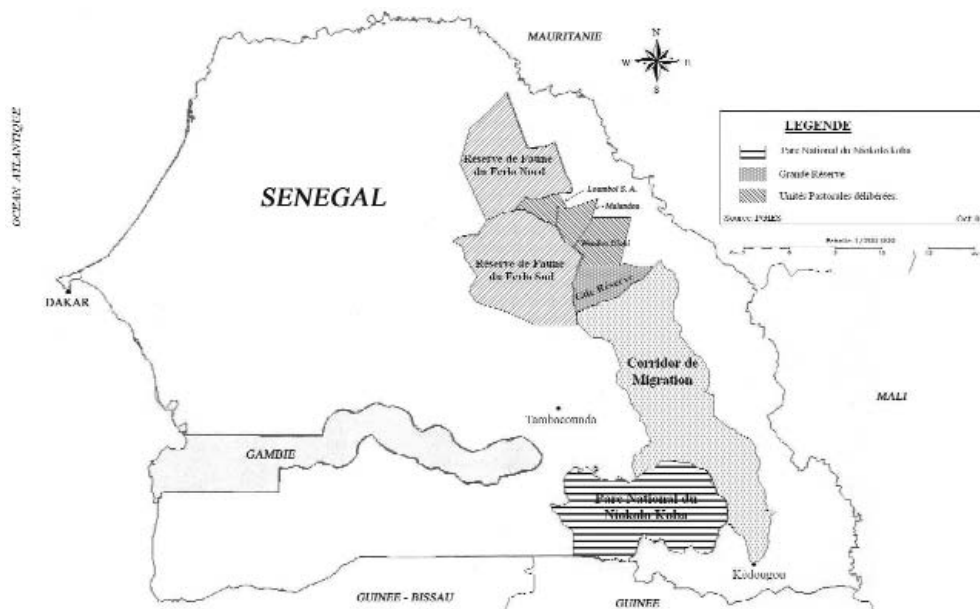
Les fonds collectés par le comité de gestion sont domiciliés à un compte bancaire

et destinés à prendre en charge les frais récurrents de fonctionnement du forage, d'ouverture et de nettoyage des pare-feux, et d'enrichissement des pâturages. Seule la qualité et l'abondance du pâturage—obtenue par la bonne gestion et la surveillance des écogardes—peut attirer les transhumants et les nomades et les encourager à payer. Une balance entre les recettes et la bonne gestion écologique nécessaire au maintien de l'affectation de l'UP est un défi que les éleveurs doivent relever avec l'assistance du PGIES, des projets partenaires, des services techniques de l'élevage et des ONG. Un autre défi est la création d'autres UPs sur propre initiative d'autres éleveurs d'autres localités du Ferlo ou par d'autres projets et ONG.

Au vu de l'engagement des éleveurs pour une bonne gestion et une utilisation durable des ressources naturelles, des demandes d'affectation légale de la terre émanant de villages pastoraux d'autres UPs (créés antérieurement par un autre projet) ont été reçues et approuvées par l'Autorité Administrative Locale avec l'assistance du PGIES. Ainsi, après l'UP de Loumbol Samba Abdoul approuvée le 06 novembre 2003, d'autres UPs suivirent avec des superficies nettement plus grandes: l'UP de Malandou pour 66 420 ha, approuvée le 29 novembre 2003 et l'UP de Wendou Diohi, pour un total de 79 850 hectares à cheval sur deux Communautés Rurales, approuvée le 1^{er} mars 2004. Deux autres UPs ont déjà été identifiées à la suite de demandes des populations mais le projet compte s'en arrêter à un

total de six UPs, devant couvrir au moins dix pour cent de la superficie du Ferlo. La suite des demandes sera prise en charge par les populations elles mêmes ou par l'assistance d'autres projets et ONG.

En général, on attend du projet des bénéfices de développement local durable mais aussi de conservation de la biodiversité, comprenant les espèces endémiques et celles globalement menacées et présentes au Ferlo. Tout comme le bétail, la faune pourra utiliser les UPs gravitant autour des Réserves de Faune du Ferlo en tant que corridors de migration saisonnière, selon les habitudes des herbivores migrateurs entre le Ferlo et le Niokolo-Koba. Tout le long du corridor du côté du Ferlo (voir Carte 1), il est prévu de créer d'autres UPs jusqu'à la route Tambacounda-Goudiry et sur la section sud du corridor il est prévu de créer plusieurs Réserves Naturelles Communautaires. Les fonctions de ces Réserves sont en fait censées être les mêmes que celles des UPs: elles doivent servir de zones de développement durable au profit des pasteurs, du bétail et de la faune. L'appellation change seulement en fonction des activités *dominantes*



Carte 1 . Carte du Corridor de migration de la faune herbivore du Parc National du Niokolo koba au Ferlo

dans une localité ou l'autre. Ces deux sections sud et nord du corridor biologique de migration de la faune entre le Parc National du Niokolo-Koba et le Ferlo débouche au Ferlo sur un espace naturelle aux confluents des vallées du Ferlo et de la vallée du Mboune. Cet espace constitue un réceptacle naturel et de cadre de séjour saisonnier de la faune migratrice du Parc National du Niokolo-Koba au Ferlo. Le projet envisage de faire de ce quartier d'hivernage de la faune une réserve de 72,320 ha. Cette « Grande Réserve » non encore occupée par des villages est localisée à l'est de la Réserve de Faune du Ferlo Sud, est à cheval sur deux CR. Des discussions sont en cours pour créer sur cet espace un Parc Local Communautaire—une innovation de taille au Sahel où la plus part des zones protégées sont gérées par l'Etat.

Le rétablissement des règles d'accès et de gestion traditionnelle communautaire des ressources naturelles de ces espaces dédiés à l'exploitation pastorale et à la conservation de la biodiversité est sans doute un autre grand défi. La tendance actuelle sur le corridor biologique de migration de la faune indique à l'accroissement de la colonisation agricole, à l'établissement de nouveaux villages et à l'occupation par des amodiations de zones de chasses. Ces amodiations sont des espaces

La sauvegarde du corridor biologique entre le Ferlo et le Parc National Niokolo-Koba — aujourd'hui fortement menacé par l'occupation des villages et des cultures— est une nécessité pour la survie de la faune mais aussi pour la survie de la mobilité du bétail

biophysiques dans lesquels la chasse est permise. Même si cette chasse ne vise pas les herbivores migrateurs (principalement constitués par les grandes antilopes), les seuls coups de fusils pendant la migration suffisent à disperser les animaux migrants les rendant ainsi plus vulnérables

aux prédateurs et aux braconniers.

La création des UPs et des Réserves Naturelles Communautaires est censée avoir un impact très positif pour la conservation de la faune car elle améliorera la connectivité biologique entre les aires protégées. En plus, l'élaboration et la mise en œuvre de plans d'aménagement et de gestion communautaire des ressources naturelles, ainsi que la mise en place de Chartes Locales des UPs interdisant la chasse et les feux de brousse, sont censées générer des profits sociaux, économiques et environnementaux considérables. Déjà en 2004, aucun cas de feu de brousse n'a pas été enregistré dans les UPs et certains écogardes ont signalé la présence de gazelles. Ces animaux, devenus désormais très rares, ont été observés lors des patrouilles et lors de la pose des pancartes de signalisation de l'UP de *Lombol Samba Abdoul*. Un autre impact positif déjà également perceptible est l'abandon des pratiques de création désordonnée des villages dans les espaces pastoraux. Cette pratique de création de hameaux en plein pâturage conduisait chaque année à des plages de désertification et leur interdiction sera suivie avec des statistiques précises. Les communautés sont aussi encouragées à éviter les feux de brousse pour pouvoir bénéficier des emplois saisonniers et des revenus durables pour l'ouverture des pare-feux. L'activité d'ouverture des pare-feux par contrat plans est en effet suspendue en cas de feu dans l'UP— ce qui motive les populations à être vigilants. Une partie des recettes des contrats plans sert à alimenter la caisse d'épargne et de crédit communautaires. Cette synergie est une innovation et est de nature à permettre au comité de gestion de faire face aux frais de paiement des caissiers sur leurs fonds propres sans apport direct du projet même au démarrage.



Figure 6 . Manifestation culturelle *bassari*. L'écotourisme est un des potentiels pour faire face aux frais récurrents du parc en assurant l'autonomie de gestion. (Courtoisie PGIES)

Avec la bonne gestion des UPs, le projet envisage d'intégrer les deux Réserves de Faune du Ferlo en une « réserve de biosphère » plus large, qui comprendra aussi le « corridor biologique » choisi par la faune dans sa migration saisonnière et la Grande Réserve communautaire dont on a traité auparavant. La sauvegarde du corridor biologique entre le Ferlo et le Parc National Niokolo-Koba (voir Carte 1) est une nécessité pour la survie de la faune mais aussi pour la survie de la mobilité du bétail. Sans corridors biologiques, les aires protégées se transformeront en de simples zoos, avec un cortège de problèmes comme la consanguinité et de fragilisation de la santé des espèces. Sans parcours de transhumance viable, le pastoralisme ne peut pas survivre durablement dans les

fragiles écosystèmes du Ferlo. Aussi bien le bétail que la faune, par contre, peuvent profiter de façon complémentaire de la situation de mise en place du corridor fonctionnant sous forme de réserve de biosphère. D'un côté la faune (principalement l'élan de Derby— *Taurotragus derbianus*)¹¹ pourra utiliser les UPs en tant que corridors de migration saisonnière. De l'autre le bétail aura aussi la possibilité de pâturer dans les aires protégées (APs) sur la base d'un plan concerté entre les agents de la conservation et les éleveurs. En d'autres mots, on mettra en valeur la complémentarité d'usage des ressources naturelles des noyaux centraux de conservation et des zones périphériques de la réserve de biosphère. Le pâturage se fera de manière saisonnière aux périodes et dans les localités les plus appropriées et sera bénéfique pour la conservation. Au niveau des pare-feux, le pâturage dans les APs permettra de retarder la maturation des graminées et donc leur assèchement, réduisant et retardant ainsi la quantité de biomasse sèche qui pourrait alimenter des feux de brousse violents. En dehors des pare-feux, le pâturage en APs facilitera la dissémination et la régénération des graines de certaines espèces forestières à tégument dur qui germent plus facilement après scarification chimique par les sucs gastriques du tube digestif des ruminants. Il est donc bien possible que, dans l'écosystème du Ferlo, la survie de la transhumance traditionnelle soit le se révélera le facteur crucial pour la conservation de la biodiversité.

Conclusions et perspectives

La restauration de la propriété collective des ressources naturelles est un pas significatif dans la gestion participative et l'utilisation durable des ressources naturelles. Dans le contexte Sahélien, elle est censée restaurer à la fois les règles de bonne gestion des ressources naturelles, maintenir la mobilité du bétail et rendre possible

des aménagements pastoraux flexibles (capable de répondre à la variabilité climatique) et sécuriser les investissements des éleveurs. La création d'un réseau d'UPs et de Réserves Naturelles gérées par les communautés gravitant autour des aires protégées du Ferlo est de nature à permettre également le rétablissement des interconnexions entre écosystèmes complémentaires—notamment entre les écosystèmes du Ferlo et ceux du Parc National du Niokolo-Koba. Ainsi, le maintien des parcours de transhumance du bétail est à la fois une garantie de maintien des corridors biologiques de migration saisonnière de la faune. A cet effet, la création d'UPs et des Réserves Naturelles Communautaires autour des APs et le long des voies de migration saisonnière de la faune est une option au profit des hommes, du bétail et de la faune. Cela pourrait bien s'étendre au niveau sous-régional (en intégrant la Gambie, le Mali, la Guinée et la Guinée Bissau) avec de plus en plus de voies de migration de la faune transformées en réserves de biosphère transfrontalières au profit, à la fois, du pastoralisme transhumant et de la conservation de la biodiversité.

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Notes

- 1 King, 1974 :29.
- 2 Enquête entretien avec des notables peuls du forage de *Pétiel* (Ferlo), Avril 2000.
- 3 Bartholomé, 1989 : 6.
- 4 Bartholomé, 1989 : 7.
- 5 Shiva, 1992:90.
- 6 Ly, 1996:36.
- 7 Hardin, 1968:1244.
- 8 Plan d'Action Forestier du Sénégal, 1993.
- 9 PGIES, Mai 2003.
- 10 Il est intéressant de noter que l'UP de Loumbol Samba Abdoul ne représente environ que la moitié d'une UP selon la théorie « moderne ». Cependant, elle correspond à environ deux *hurums* traditionnels (l'un autour des mares le long de la vallée du Ferlo et l'autre autour des mares de la vallée du Loumbol).
- 11 Les éléphants (*Loxodonta africana*) effectuaient habituellement des migrations saisonnières du Parc National du Niokolo-Koba au Ferlo à travers le corridor biologique entre ces deux aires protégées. Ils ont actuellement disparu de ce corridor et le dernier à y être signalé remonte à la fin des années 1950. Un projet de pose de colliers pour un suivi des espèces par voie satellitaire et par antenne VHF est en cours. Il apportera plus des renseignements sur les espèces qui continuent à migrer le long du corridor.

History, Culture, and Conservation: in search of more informed guesses about whether "community-based conservation" has a chance to work

Jim Igoe

Summary. Community-based conservation seeks to protect biodiversity by enrolling local people, especially indigenous ones, in resource conservation. The approach is based on a perceived overlap between biological and cultural diversity on a global scale. It assumes, therefore, that indigenous peoples are important partners for conservation, and their environmental knowledge should be valued and applied. Generally, culture and indigenous knowledge are treated as a coherent bundle of ideas and values that dictate how people manage natural resources. This view of culture, however, is at variance with current trends in anthropology, which see culture as essentially incoherent and historically contingent. Importantly, competing groups appear as constantly struggling to define values and meaning to their own advantage. Culture, in other words, is seen as constantly contested and never stable. In particular, we should better understand cultural "change" that occurred under conditions of colonialism and as a consequence of the imposition of national park style conservation on indigenous communities. Drawing on a survey of national parks and indigenous communities from around the world, this article identifies and discusses five historical and cultural variables that exert fundamental influence on the outcome of community-based conservation interventions, including: 1) colonial histories and conservation encounters; 2) sovereignty and political clout; 3) civil society and NGOs; 4) historically contingent attitudes towards conservation; 5) capacity and indigenous environmental knowledge. The article concludes that effective conservation interventions will need to be flexible enough to recognise and incorporate the complexity of these cultural/historical variables.

"We have to doubt the long-term viability of approaches that rely heavily on the ... exclusion of local people from both the land and associated decision making processes." (Roe et al., 2003: 91).

"You know, one has to say thank God somebody did think of stealing this land from somebody else, because if they hadn't we wouldn't have it today." (Leakey, 2003: 11).

Most readers will recognise that the above quotes represent a fundamental schism within the conservation movement, between community-based conservation and the 'back to the barriers' movement. As an anthropologist, I find this schism interesting because it demonstrates the contested nature of culture, as well as its historical contingency.

The schism not only reflects fundamental differences in the direction that the movement should take, but also fundamentally

different assumptions about how nature works and the place of human beings within it. Importantly, these struggles are closely linked to certain types of prizes: funding, research opportunities, and prestige to name a few. The schism also reflects responses to global historical processes. Following the collapse of the Soviet Union, two new global imperatives emerged: 1) democratisation; and 2) free market capitalism.

Democratisation empowered local people, giving them a greater voice in the conservation movement. Meanwhile, free market capitalism threatened biodiversity in every part of the world. Some conservationists have responded to these events by putting up barriers. Others argue that it will be necessary to adopt flexible, albeit more risky, strategies if we are to contend with these complex changes.

If fundamental conflicts about meaning and values pervade the conservation movement, it is reasonable to expect that they also per-

vade the communities that are so often its targets. As in the conservation movement, these struggles are often linked to certain kinds of prizes, especially natural resources and conservation/development funding. Moreover, they are historically contingent, and fundamentally shaped by global processes. In this light, some considerations can help us to understand the relationship between culture and local conservation practice.

First: , “the ways of being and living in the world that we think of as culture can be seen as a particular forms assumed by the interaction of a multitude of historical processes at particular moments in time”.¹ In other words, history and culture are inextricably linked, and ideas and values are continually shaped and reshaped through action and practice.² Second: action and practice take place in specific physical environments. As these physical environments are transformed, people must adapt and transform accordingly their practices, cultural values and environmental knowledge.

In my own research I have studied issues of history, culture, and conservation with Maasai communities living on the borders of Tarangire in Tanzania, and Oglala Sioux communities living on the borders of Badlands National Park in South Dakota, U.S.A. Additionally, I am involved in ongoing discussions with anthropologists and conservation practitioners engaged in similar work in other parts of the world. Finally, I have worked with students in my class *Conservation, Globalisation, and Indigenous Communities* to compare written case studies from around the world. We have identified five interrelated historical and cultural variables that appear to influence outcomes of community-based conservation. These variables include:

1. Colonial Histories and Conservation Encounters;
2. Sovereignty and Political Clout;

3. Civil Society and NGOs;
- Local Attitudes Towards Conservation; and
4. Indigenous Environmental Knowledge and the Issue of Capacity.



Figure 1. A group of Lakota activists called the Keepers of the Stronghold Dream meet at their encampment inside the Badlands National Park under the tribal and spiritual flags of the Lakota Nation. These activists have been occupying parts of the park that overlaps with their tribal land since July of 2003, demanding that the U.S. National Park Service returns the land to the Lakota. Leaders of this group are currently working with the Oglala Sioux Parks and Recreation Authority and the Oglala Lakota College to create a plan to convert this area into a tribal park or wilderness area. (Courtesy James Igoe).

In this article I outline these variables, and touch upon the ways in which they have influenced community-based conservation interventions in different local contexts. These necessarily brief discussions in no way represent a comprehensive paradigm. Rather they suggest a tentative framework for future research geared towards understanding the interplay of history and culture in community-based conservation. I firmly believe that such knowledge is essential to the design and implementation of conservation interventions that are effective in both 1) protecting biodiversity; 2) ensuring equitable distribution of benefits to the local communities that pay for conservation by foregoing access to land and other natural resource on which their livelihoods depend.

Colonial Histories and Conservation Encounters

"We were told to sign. It was never explained to us. None of the elders knew how to read or write. You white people are very tough." A signatory of the 1958 agreement stipulating that the Maasai would leave the Serengeti National Park, speaking to investigative journalist Raymond Bonner (1993: 175)

"The Park Service have been dragging their feet. We do have something in common and should try to develop it to the point that it is an asset to both groups. They have not followed what they committed themselves to do." Johnson Holy Rock, Oglala Sioux tribal council member, speaking to investigative journalist Phillip Burnham (2000: 228) about the agreement between the tribe and the administration of Badlands National Park

Whatever local conservation models may have existed prior to the 19th century have now been subsumed, or at least profoundly influenced, by colonialism, the rise of the nation state, and the global spread of capitalism.³ Any study of the relationship

Any study of the relationship between culture and conservation at the local level will be incomplete without taking into account colonialism, the rise of the nation state, and the global spread of capitalism.

between culture and conservation at the local level will be incomplete without taking these global historical processes into account.

The global historical development with the most direct relevance to community-based conservation, however, is the rise of the national park as a conservation model.⁴ Much has been written recently on the history of parks and European expansion, so the details of these encounters need not detain us here.

However, four important points need to be made:

1. the national park model incorporates a western view of the world, which posits a radical separation of humans and nature;
2. as such, parks were frequently created without regard for local people and their relationship to the environment;
3. their rigid boundaries also ignored the interconnectedness of ecosystems, and especially ecological processes that occurred beyond them; and
4. in spite of rhetoric to the contrary, this conservation model has remained a central component of conservation in the way that it affects indigenous communities around the world.

For those of us who are concerned about community-based conservation, one of the most important implications of this history is the ways in which the creation of parks on a global scale has transformed ecosystems and resource management practices at the local level. In Tanzania, for instance, the creation of Tarangire National Park has contributed to the transformation of the Maasai herding economy towards settled subsistence and commercial agriculture. This transformation is distressing to western conservationists, since Maasai farms block wildlife migration routes, bringing local people into conflict with migrating wildlife.⁵

In the American west, the creation of parks was part of the process by which the state contained Native Americans on reservations. This, in turn, transformed their livelihood activities in ways that bring them into conflicts with national parks.⁶ At Mesa Verde National Park, for instance, park administrators have been consistently concerned about the activities of the Ute Mountain Ute Tribe, especially natural gas exploration, cattle ranching, and helicopter tours. The administration of Badlands National Park has long sought to convince the Oglala Sioux Tribe to abandon cattle ranching, pro-

moted by the reservation system, in favor of a free range bison herd in the area of the park that overlaps their reservation. Although the idea resonates with the cultural history and ideals of the Oglala, it is unfortunately not nearly as profitable as cattle ranching. Furthermore, a large segment of Oglala society has embraced cowboy culture. Rodeos have become one of the central social events in Oglala society.

In addition to these socio-ecological transformations, parks have displaced and impoverished local people in ways that almost guarantee antagonistic relationships

Colonial histories have shaped indigenous livelihoods and social organisation in ways that have fundamental implications for local conservation values, as well as for the inclination of specific groups to participate in community-based conservation

between indigenous communities and western conservationists. This in turn almost guarantees that some interest groups within these societies will use opposition to conservation as ammunition in cultural debates. In short, these colonial histories have shaped indigenous livelihoods and social organisation in ways that have fundamental implications for local conservation

values, as well as for the inclination of specific groups to participate in community-based conservation.

Nevertheless, many of the western conservationists I have interviewed in my work are dismissive of the idea that colonial histories have anything to do with what they are currently trying to achieve. This a-historical perspective is unfortunate, not only because it keeps conservationists and indigenous communities from working together, but also because it misses out on historical moments where they have worked well together, and, therefore, opportunities to learn from successes as well as from failures. In Alaska, Australia, Bolivia, and

Colombia, for instance, indigenous leaders actively lobbied government officials to gazette parks in their traditional territories. Local people became active participants in the creation of national parks. (Gates of the Arctic National Park in the U.S., Kakadu in Australia, Kaa Yia in Bolivia, and Alto Fragua Indiwasi in Colombia) in the hopes that they would protect their lands from large-scale commercial interests.⁷ In Brazil, indigenous people were allowed to live inside of parks as another type of “endangered species”.⁸ While this arrangement causes other types of problems, it has allowed some groups to continue pursuing their traditional livelihood strategies, thereby providing incentives for them to value protected areas, which they perceive as protecting their cultural autonomy.

These examples illustrate the need for a historical understanding of the impacts of global processes and institutions on local culture and resource management practices. Understanding these histories will allow western conservationists to address the historical grievances of indigenous communities. It will also illuminate circumstances under which global processes sparked local movements to create protected areas or engage in other types of community-based conservation programmes. Finally, it will help us to understand the ways in which parks have transformed local ecologies and resource management practices. Such an understanding is crucial for identifying obstacles to local livelihood activities that resonate with people’s cultural values, are economically viable, and protect biodiversity. Significantly, these are the very types of activities that indigenous environmental activists are likely to instigate and/or support.

Sovereignty and Political Clout

“Very few conservationists could truthfully say that they would vigorously support subsistence hunting if the natives had zero

Two closely related historical variables appear to influence political clout for indigenous communities: sovereignty and legal rights to land, especially in the form of an officially designated corporate territory

political clout. "Robert Weeden, President of the Alaska Conservation Society in the 1970s (Catton 1997: 209)

In addition to understanding the local transformations brought about by the creation of national parks and other protected areas, it is also important to understand historical variables influencing the political clout of specific indigenous communities.

Political clout empowers indigenous communities to pursue livelihood strategies that resonate with their traditional cultural values. It also makes them viable partners in community-based conservation interventions, while allowing them to enter into partnerships on a relatively equal footing with western conservationists.

Two closely related historical variables appear to influence political clout for indigenous communities: sovereignty and legal rights to land, especially in the form of an officially designated corporate territory.⁹ In situations where such rights are present, indigenous communities have more opportunities to pursue resource management practices that are consistent with their 'traditional' cultural values, although this is no guarantee that they will do so. These types of rights also create opportunities to take a prominent role in defining conservation interventions, of which they are the intended beneficiaries. In situations where they do not enjoy these rights, they have tended to fare much worse.¹⁰

The case of Tanzania presents a particularly poignant example of this problem. Colonial land laws in this country were designed specifically to transfer land from African communities to European settlers and colonial development/conservation projects,

including parks. These transfers could be undertaken by bureaucratic fiat, without consulting local communities. The situation remains nearly unchanged in contemporary Tanzania.¹¹ As these processes of land transfer fundamentally transformed peoples resource management systems, they also transformed their cultural values and environmental knowledge. Often new resource management practices and cultural values are inimical to the management of parks and other protected areas.¹² This situation has also contributed to an atmosphere of suspicion concerning anything called conservation. Finally, since local people have little say over the disposition of land and other natural resources, they have little to offer as partners in community-based conservation interventions.

This situation stands in stark contrast to Alaska and Australia, where the legally protected land rights of indigenous communities has enabled them to negotiate for the creation of parks that would protect their traditional territories, and in which they would be allowed to remain resident. They also were able to negotiate co-management agreements, in which indigenous representatives would have a direct role in the management of the parks in question. The situation also stands in contrast to Brazil where the protected status of indigenous communities has allowed them to enter into alliances with international conservation organisations to create even larger parks and prevent the construction of a hydroelectric dam.¹³

In the United States, some indigenous communities enjoy both legally protected territory and quasi-sovereign status. Because of the nature of the history of parks and reservations, however, this situation has not consistently translated into political clout for indigenous communities when it comes to conservation.¹⁴ Some indigenous groups were removed from places that became

parks (Yellowstone). In other cases parks were created by the "ceding" of reservation land (Glacier and Mesa Verde). There are even some cases where small indigenous communities have remained resident in national parks with few legal rights (Death Valley, Grand Canyon, and Yosemite).

At Badlands National Park, where I currently conduct field research, the axe of sovereignty cuts both ways. The tribal government of the Oglala Sioux is currently negoti-

A group of Oglala environmental activists have been working to introduce an 'Indigenous Stewardship Model' through which local people would be able to manage natural resources according to their traditional values

ating for an arrangement that will bring benefits to local people and enhance tribal sovereignty. However, Oglala traditionalists view the tribal government as the root of their problems. They argue that elected tribal officials have consistently entered into agreements that are detrimental to the interests of local people. The current agreement between the tribe

and the National Park Service, for instance, grants the administration of Badlands National Park authority to manage tribal lands. A group of Oglala traditionalists has occupied part of the park, demanding that the park service withdraw forthwith.

Meanwhile, a group of Oglala environmental activists have been working to introduce an 'Indigenous Stewardship Model' through which local people would be able to manage natural resources according to their traditional values.¹⁵ Because of the ongoing ideological struggle surrounding the Badlands National Park, however, it has been very difficult for them to make this model a reality.

Finally, it is important to note that tribal sovereignty has been an essential component to the creation of indigenous protected areas. Indigenous communities that enjoy the legal status of sovereign entities have

the land necessary to create protected areas, as well as the bureaucratic capacity to manage it. In such cases, traditional cultural values are enshrined in parks that are similar to the western model, but which also incorporate important differences. The Ute Mountain Tribal Park in Southwestern Colorado protects ancient Anasazi ruins according to spiritual values of several Native American groups, rather than the interpretive imperatives of the National Park Service.¹⁶ The Kuna Indians of eastern Panama have created the Kuna Park in order to protect the rainforests on the eastern slopes of the San Blas Mountains. In so doing they have preserved their traditional livelihoods as well as their cultural values, as they believe that the forest is home to their ancestor spirits. The Kuna Park gained a great deal of recognition and funding from international conservation organisations.¹⁷

Civil Society and Non-Governmental Organisations

"Civil society occupies a unique space, where ideas are born, where mindsets are changed, and where the work of conservation and development doesn't just get talked about, but gets done." Kofi Annan, U.N. Secretary General, speaking to a civil society forum in Johannesburg, South Africa, on September 2nd 2002

Tribal governments can be either a boon or a liability to community-based conservation. In the case of the Kuna and the Ute Mountain Ute tribal government became a focal point for the creation of indigenous protected areas. In the case of the Oglala Sioux, however, tribal government has become the focal point for struggles over cultural meaning, especially over what it means to be Lakota. These struggles are closely tied to efforts of the U.S. Government to administer the Oglala through a system of "indirect rule".

The creation of native administrations

around the world was motivated by a desire to simplify the administration of native communities. Through officially designated 'native authorities' it became possible for colonial administrators to negotiate legally binding agreements with heterogeneous communities of people without having to grapple with the complexities of this heterogeneity. The outcomes of such an arrangement are clearly visible at Pine Ridge, where the administration of Badlands National Park claims to have a legally binding agreement with a tribal government, which many of its constituents refuse to recognise as legitimate.¹⁸

Significantly, such arrangements are out of step with global trends in conservation, development, and governance. Since the collapse of the Soviet Union, there has been a new global imperative to build civil society through the promotion of a vibrant NGO sector. While the idea of building civil society certainly predates this collapse, prior imperatives focused more centrally on containing communism (or capitalism) through state-centered development and conservation. Since 1990 there has been an explosion of NGOs on a global scale.¹⁹

Indigenous NGOs are not a panacea for community-based conservation. As with tribal governments, there is a risk that they will privilege certain cultural voices at the expense of others. Like tribal governments they can also become the stake of cultural struggles. In best case scenarios, however, indigenous NGOs allow diverse groups of people to participate in conservation and governance. As such, they create the possibility that marginal groups might gain access to resources that would allow them to make their voices heard, not just locally but even on a global scale. In short, a vibrant NGO sector has the potential to institutionalise the complexity of the cultural debates surrounding the meaning and direction of conservation in specific local con-

texts.

An important indigenous NGO success story, from the perspective of western conservationists, is an organisation of the Kuna Indians called PEMANSKY (Study Project for the Management of the Wildlands of Kuna Yala – translated from Spanish). While PEMANSKY was never officially registered as an NGO, it operated like one. In spite of numerous internal problems, the organisation succeeded in invoking Kuna cultural values to mobilise the Kuna to protect the boundaries of their reservation in the 1980s. It also succeeded in capturing substantial sums of donor money so that these efforts resulted in the creation of the Kuna Park. Although PEMANSKY is more or less defunct at this point, it inspired the creation of other Kuna NGOs now working to promote local conservation initiatives, as well as instilling a general conservation ethic amongst the people of Kuna Yala.²⁰

Most of the Maasai NGOs I worked with in Tanzania also claimed to promote conservation. However, the majority of these organisations held that community-based conservation needed to begin by giving local people more control over land and natural resources. Furthermore, they argued, that conservation for the Maasai would need to build on traditional Maasai resource management practices. One organisation in particular, however, cooperated with the Tanzania National Parks Authority and the African Wildlife Foundation to promote community-based conservation programmes that most local people perceived as inimical to their interests. As a result, cultural debates concerning conservation in Maasai communities began to revolve around: i) the costs and benefits of working with these outsiders; and ii) which organisations possessed the legitimate authority to speak for the community.²¹

Indigenous NGOs in the United States have

yet to make a comparable impact on community-based conservation, since conservation and development work for tribes in the U.S. is dominated by tribal governments. Furthermore, indigenous NGOs in the U.S. are oriented primarily to tribal governments and Bureau of Indian Affairs (BIA) funding.²² This makes it difficult for them to define or follow alternative agendas.²³ This is unfortunate, because it makes it difficult for diverse interests to influence protected area management. This not only leads to intractable problems like the current situa-

international conservation NGOs should not sidestep the complexities of cultural debates surrounding conservation at the local level [...] and be especially mindful of the possibility that the resources they bring to a community might be empowering some people at the expense of others

tion at Badlands, it also makes it difficult for individuals outside tribal government to promote conservation initiatives based on the values, needs, and aspirations of local people.

In considering the role of indigenous NGOs in conservation, it is important to note that they receive much of their support from international conservation NGOs like the World Wide Fund for Nature (WWF) and the African Wildlife Foundation (AWF).

They also receive technical support and enhanced legitimacy from the World Conservation Union (IUCN). It is imperative, therefore, that these organisations learn from the mistakes of colonial governments. First, they should avoid sidestepping the complexities of cultural debates surrounding conservation at the local level by working with a handful of 'community representatives.' Second, they should remain aware of the impacts of their own ideas and actions on the nature and direction of these debates. They should be especially mindful of the possibility that the resources they bring to a community might be empowering some people at the expense of others. Finally, they should acknowledge the ways

in which historical encounters have shaped local attitudes to the idea of conservation.

Local Attitudes towards Conservation

"We Eskimos would like to join the Sierra Club." Inuit Activist William Willoya advocating for the creation of a park that would protect Inuit land rights (Catton, 1997: 195)

"We have to be very careful about what we say. Those conservationists are just waiting for us to make a mistake." Ernest House Senior, Ute Mountain Ute Council Member, speaking to a council meeting in July of 2002

The question of local attitudes towards conservation is closely tied to the ways in which local cultural values are shaped by historical encounters with the global system. Many western conservationists I have interviewed have expressed bewilderment over the negative attitudes of indigenous communities towards conservation. They describe local people as intractable and ignorant, fundamentally incapable of seeing the potential benefits of conservation. From this perspective, negative local attitudes towards conservation represent something that needs to be changed, or at the very least worked around. What this perspective ignores, however, is that most people's attitudes reflect something about their experiences. A more rational perspective on local attitudes towards conservation would be to begin with the assumption that different attitudes reflect different experiences. For indigenous people the word "conservation" may have very different meanings and associations than it does for people in the west – especially those who have dedicated their lives to conservation and are emotionally invested in the concept.

When I asked my informants in Tanzania if the Maasai did conservation, they usually responded, "Of course not, why would we

do anything so ridiculous?" If I asked them, however, whether they ever managed the environment in ways that were beneficial to wildlife, they often responded, "Of course, don't you see that more animals graze in the areas that we burned last year than in other areas?" In short, most of my informants didn't describe conservation as an activity, but as an alien force over which they have no control.

This situation stands in contrast to the Inuit who wanted to "join the Sierra Club." Other groups, like the Anangu in Australia and the Kayapo in Brazil, have also sought alliances with western conservationists. The Kuna started a conservation initiative that achieved international renown. While members of these groups might not see conservation as a wholly positive thing, they obviously can see that it has possibilities. It can become the basis for alliance to protect traditional homelands and to promote conservation models that respect their cultural values.

In short, peoples' attitudes towards conservation, based on historical experience with conservation, will shape local cultural debates surrounding conservation. By extension they will also shape peoples' cultural values and conservation practice.

Indigenous Environmental Knowledge and the Issue of Capacity

We felt that under new African Governments, all prospects for conservation in nature would be ended. Max Nicholson, founding member of the WWF, explaining the interference of western conservation organisation in the internal affairs of Kenya and Tanzania during the 1960s (Bonner 1993: 64)

In the discourses of community-based conservation, indigenous communities are represented as ideal conservation partners.

They have been managing ecosystems for generations. Their knowledge of those ecosystems must be intricate indeed. Furthermore, since they depend on the continued viability of those ecosystems for their survival, they must have a vested interest in seeing them conserved. On the other side of the coin, however, is a niggling doubt that members of these communities lack the skills and mindsets necessary to do conservation correctly.

This contradiction reveals a fundamental oversight of the historical and cultural processes briefly addressed in this paper. The historical legacy of national parks and conservation bureaucracies make it difficult for conservation programmes to incorporate indigenous environmental knowledge that does not serve the agendas and bureaucratic imperatives of these institutions.²⁴ Finally, recent work by social scientists has increasingly questioned notions of indigenous knowledge as integrated systems of information that can be known and incorporated by conservation policy makers. Like other aspects of culture, indigenous knowledge is contested and changing. Furthermore, since knowledge is embedded in practice, the idea of applying indigenous environmental knowledge to conservation issues that do not resonate with local practices is inherently problematic.²⁵ As Agrawal argues, unless communities have significant authority over the disposition of natural resources in their midst, indigenous environmental knowledge is of little use to conservation interventions targeting indigenous peoples.²⁶

These complex issues are complicated by the fact that the participation of indigenous peoples in community-based conservation requires them to acquire skills, such as accounting and grant-writing, which are not parts of their 'traditional' knowledge systems. This fundamental disconnect is clearly illustrated in a WWF policy document, which simultaneously prescribes the "revitalisation

of cultural traditions," "capacity building," and the "creation of alternatives to traditional subsistence practices".²⁷

These contradictory imperatives present two dangers. First, training usually involves indoctrination. Not only are indigenous leaders given new types of skills, they are also

A fundamental disconnect is clearly illustrated in policy documents that simultaneously prescribe the "revitalisation of cultural traditions" but also "capacity building" and the "creation of alternatives to traditional subsistence practices".

immersed in the cultural values that go along with them. Second, conservationists frequently use lack of community capacity as a reason not to involve local people in protected area management. In spite of these dangers, the issue of community capacity is pragmatically important. Even the Ute Mountain Ute, who would prefer to keep westerners out of their business, cautiously

engage experts to teach them the skills necessary to run their tribal park. Finally, the question of capacity is a two way street. While western conservationists are usually well trained to do conservation, they frequently lack the capacity for intercultural communication necessary to work effectively with indigenous communities

Conclusion

"The reformulation of norms is an essentially political process. It is not merely an epistemological exercise, nor is it the discovery of some self-evident truths" (Sheth, 1987: 163).

As I cautioned in the introduction in this article, the variables presented here are not a comprehensive paradigm for understanding community-based conservation. Rather they are offered as a tentative guideline for future research, and hopefully suggest some ways in which community-based conservation might be reconceptualised in

order to become more effective.

Community-based conservation is often conceptualised as a global project that builds on the diverse cultural values and conservation practices of communities around the world. Part of this project, therefore, is to discover and describe the relationship of culture to conservation in diverse local contexts so that they might be incorporated into conservation interventions. A more fruitful perspective, I suggest, would be to conceptualise culture as a contested and historically contingent process, which is fundamentally shaped by global historical processes. Conservation, including community-based conservation, can then be conceptualised as one of the many global historical processes that influence cultural debates in diverse local contexts.

On one level, this perspective is less appealing than a straightforward cataloging of indigenous environmental knowledge – since it renders the task of conservation policy makers much more complicated. However, it provides a more nuanced understanding of the local situations in which community-based conservation will necessarily unfold, thereby providing opportunities to avoid the pitfalls experienced by previous approaches. This approach provides a guide for making informed guesses about how historical and cultural variables might influence the outcomes of planned conservation interventions. More importantly, it has the potential to reveal how conservation interventions might be reconceptualised in response to different local contexts. For me, this approach begins with a series of questions:

- Have local peoples' *experience with "official conservation"* to this point been positive or negative? If they have been negative, is it possible to address their historical grievances in ways that might give them a more positive view of conservation?

- Does a specific group enjoy sovereign status and/or legal entitlement to manage and conserve natural resources within their traditional territory? In other words, do they have the *authority* to translate their cultural values into conservation practice.
- How have historical processes transformed people's *access and control* over land and other natural resources? How have these transformations in turn transformed their resource management practices? How have these transformations in turn transformed their cultural values and environmental knowledge?
- What *interest groups* exist within a particular community? How are their relationships influenced by access to resources, ideas, and institutions from the global system? Which of these groups has the loudest voice? How do they differ on resource management and conservation issues? How do their interactions influence their resource management and conservation practice?
- How are *interactions* between these groups of people expressed and organised – through traditional forms of social organisation, tribal governments, NGOs, or some combination of these?
- What kinds of *resources*, including skills and information, do local people have at their disposal to promote their cultural values and conservation practices? What kinds of resources that they currently lack could help them become more effective at doing these things?

Such an approach is obviously cumbersome and open-ended. As such it goes against the grain of standard development practice, which by extension is now part of community-based conservation. "Development" is a simplifying process. By defining a simple set of problems, it defines simple solutions, which can be implemented according to bureaucratic funding cycles. Unfortunately,

this often entails forcing simplicity onto very complex situations, by working with narrowly defined groups of people and/or defining culture as a coherent bundle of legible traits. The bad news is that these types of approaches frequently exacerbate the very complexity they deny, by adding fuel to existing cultural struggles. The good news is that by working to understand the specifics of these complexities it may become possible to adopt more flexible and open-ended approaches to conservation that may succeed in protecting biodiversity through ways that also benefit and empower local people.

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Notes

- 1 Crehan, 2002: 72.
- 2 Crehan, 2002; Hobart, 1993; Agrawal, 1995.
- 3 Wallerstein, 1980; Wolf, 1982.
- 4 West and Brechin, 1991; Keller and Turek, 1998; Neumann, 1998; Spence, 1999; Jacoby, 2001; Igoe, 2003.
- 5 Igoe, 2002; Igoe, 2003.
- 6 Burnham, 2000; Jacoby, 2001.
- 7 Catton, 1997; De Lacy, 1994; Lawrence, 2000; Winer, 2003; Zuluaga *et al.*, 2003.
- 8 Davis, 1977; Nugent, 1994.
- 9 Niezen, 2003.
- 10 Igoe, 2003: Chapter 5.
- 11 URT, 1993; Shivji, 1998.
- 12 Igoe, 2002; Neumann, 2003.
- 13 Colchester, 1993; Turner, 1993.
- 14 Keller and Turek, 1998; Spence 1999; Burnham 2000; Jacoby, 2001.
- 15 Igoe, 2003: 141-142.
- 16 Igoe, 2003: 161-167.
- 17 Chapin, 2000.
- 18 According to archival documents, attempts to create a tribal government for the Oglala Sioux in the 1940s led to bitter divisions on the reservation. The decision to accept a tribal government passed by a handful of votes. A later motion to recall the tribal government was again defeated by a handful of votes. This split emerged again in the mid-1970s, when a pro-government faction known as the Goons fought violently with traditionalists who had joined the American Indian movement. It was during this period that the Oglala Sioux Tribal Government signed a Memorandum of Agreement with the Park Service. In the 1990s, traditionalists occupied the tribal offices. Many of these people are now involved in the occupation of the South Unit of Badlands National Park. The two districts closest to Badlands National Park, and therefore most directly effected by it, are coincidentally the areas that are most anti-government.
- 19 Igoe and Kelsall, in press.
- 20 Chapin, 2000.
- 21 Igoe, 2000; Igoe, 2003.
- 22 The Bureau of Indian Affairs is an agency of the United States Department of the Interior. It oversees the operation of tribal governments and has a major role in the funding they receive.
- 23 Kathleen Pickering, personal communication, 2003.
- 24 Pickering, Ross and Igoe, forthcoming.
- 25 Hobart, 1993.
- 26 Agrawal, 1997.
- 27 WWF, 1997: 29.

Development dilemmas and administrative ambiguities— terracing and land use planning committees in North Pare, Tanzania

Michael J. Sheridan

Summary. This article describes the technical, social, and moral contradictions embedded within a relatively successful soil and water conservation programme in rural Tanzania in order to explain why farmers' participation was tinged with ambivalence, resentment, and resistance. The Tanzania Forestry Action Plan – North Pare project, funded by GTZ, worked throughout the 1990s to prevent soil erosion by encouraging the construction of terraces and the establishment of village-based land use planning committees. Farmers have indeed built many terraces, but their participation was reluctant at best. From the farmers' point of view, the technical problems included delayed returns on a substantial labor investment and the destruction of cash crops and indigenous terraces, but their misgivings about terracing lay more in social, political and moral relationships than in layers of soil. Terracing threatened the web of social relationships in land through which farmers borrow, rent, and hold land. Specifically, terracing tended to transfer rights in land from women to men and from younger men to older men. These threats led many farmers in North Pare to regard the terracing programme as immoral and therefore a threat to the productivity of the land. Land use planning committees were also full of contradictions and ambiguities. Development agency facilitators usually dominated the agenda of these institutions and prevented local needs and innovations from being communicated up the project hierarchy. A more serious problem was the committees' ambiguous political status as advisory groups for village governments without any powers of sanction or control. This issue and many farmers' sense of jealousy toward those in non-participating villages led many to consider the committees also rife with moral flaws. Development policy-making should not assume that the term 'community' does not imply coherence, consensus, and harmony. This analysis suggests, instead, that a political and cultural analysis of the technical, social, and moral quandaries faced by resource users is needed to illuminate some of the pitfalls of the CBNRM approach. Yet, the devolution of resource management authority to community-level institutions remains one of the best options for ameliorating the contradictions of neo-liberal economic globalisation.

The goals, methods, actors, and institutional context of development planning changed globally in the last decades of the 20th century. The emphasis on centrally controlled projects for modernizing the postcolonial states shifted to a focus on participatory development planning. This sort of "bottom-up development" rests on the dictum that efficient and equitable land management results when resource users become resource managers in local 'appropriator organisations'.¹ This localised approach is now known as either Community-Based Conservation² or Community-Based Natural Resource Management (CBNRM).³ The term "community" is the most important part of

these policy acronyms because it connotes equality, agreement, and autonomy. Although the image of a participatory community wholeheartedly agreeing to manage its own resources efficiently and equitably certainly holds great appeal for analysts as well as the rural poor, all too often such projects involve degrees of participation in non-homogeneous and non-consensual communities.⁴ There is a contradiction between a development agency's need to pursue its mandate and its desire to empower the rural poor to set their own agenda. All too often, the consequences of this contradiction are conflict and ambiguity. This article describes the technical, social, and moral contradictions embedded within a relatively successful soil and water conservation (SWC) pro-

gramme in Tanzania in order to explain why farmers' participation is tinged with ambivalence, resentment, and resistance.⁵

The Tanzania Forestry Action Plan - North Pare (hereafter TFAP) was a project funded and implemented by Germany's GTZ agency in the North Pare Mountains of Mwanga District. The agency worked throughout the 1990s to reverse a perceived Malthusian crisis⁶ through afforestation, soil and water conservation technologies, building local land management institutions. The strategies for achieving these objectives included the formation of Land Use Planning Committees (hereafter LUPCs) in project villages and the promotion of terracing. Understanding why many participants have, at best, an ambivalent attitude toward the project requires a political and cultural analysis of what administrators often view as technical issues. Such an anthropological approach can provide conservation practitioners a blueprint for issues to consider, questions to ask, and assumptions to avoid. By viewing communities, societies, and cultures as processes of differentiated economic, socio-political, and moral contestation (and ambiguity) rather than consensus-based static objects, more effective and appropriate conservation programs may result.

The development dilemmas of terracing

TFAP planners identified soil erosion as the major environmental problem in North Pare.⁷ Most of the soils in the steep mountains are moderately fertile and highly prone to erosion red sandy clay loams. Except for the rich loam in valley bottoms, the soil has low to medium levels of the major plant nutrients and is strongly acidic.⁸ Farmers grow coffee, bananas, beans, maize and sweet potatoes, and with a median total farm size of 0.78 hectares (1.9 acres), few can afford

to leave their plots fallow to recover after several years of cropping.⁹

To prevent the further loss of topsoil, TFAP encouraged North Pare farmers to construct bench and *fanya juu* terraces¹⁰. A major problem with both types is that construction inverts the soil profile by placing relatively infertile subsoil on top of more fertile topsoil. This depresses yields on terraces for several years unless the farmer applies manure or mulch — both of which are in short supply in North Pare. Grass and leguminous cover crops are therefore necessary to feed livestock and increase the manure supply. In theory, increased soil fertility should eventually compensate farmers for the land area lost to the grass strips and vertical walls. Most North Pare farmers, however, focus on shorter time horizons. As one woman explained her misgivings in a public meeting:

"We don't want terraces because there is no profit in it, and it makes lots of extra work to restore the soil's fertility, so we have given up terracing. You can't ask us to terrace a big area, because after we do it, we get no food from that land for sev-



Figure 1. Un-terraced fields with 'trash line' bunds, June 2004 (Courtesy Michael Sheridan)

eral years, and where else can we go to grow food?"

Terracing has high short-term labor costs, even after construction is complete. Given that terracing two acres would, on average, take one person 66 eight-hour days,¹¹ most farmers simply do not have the time and endurance the task requires. Furthermore, terracing is highly seasonal because it can only be done after harvesting and before planting, so it coincides with the seasons of peak labor demand (in September/October and January/February).

To overcome these technical obstacles, TFAP brought considerable political pressure to bear on North Pare farmers. Most importantly, the area's Member of Parliament declared that he wanted all highlands farms terraced as quickly as possible. Administrative officials often cited this informal declaration and give it the force of law by saying that terracing "is a government order" (*ni amri ya serikali*). In local meetings these officials made it clear that the office tenure of village leaders was dependent on building terraces on their lands. Officials justify this coercion by manipulating the discourse of participatory development espoused by TFAP. At one meeting that I attended, an administrative officer was pressing village leaders to set a date for an agricultural extensionist to measure their farms (which would then formally commit them to terracing before planting). This made the village leaders very anxious, and one village chairman said that few of them had the resources or ability to build so many terraces. The officer responded that "the government is facilitating agricultural development, even in difficult areas like [the chairman's village], so the government is making you village leaders into facilitators for your neighbors' benefit."¹² While the local government used the stick, TFAP offered the carrot. TFAP supplied tree seedlings and provided tools for terrace-

building work groups. With these pressures and incentives, North Pare farmers terraced approximately 40 hectares of land annually throughout the 1990s. Crop yields increased and many farmers shifted to higher-value crops on terraced land.

They did not, however, do this work without serious misgivings because terrace construction threatened the existing economic, social, and moral order. At the core of the dilemma were ambiguities over the importance of terraced land, the status of permanent crops, and the status of the terraces themselves. Many highland families rely more on their lowland plots for food than the highland areas to be terraced, and this drained the urgency out of TFAP's message. Men feared that they would have to uproot coffee trees and women worried that they would have to uproot banana plants. Farmers got little solace when they voiced these worries in committee meetings because agency and government extensionists, not farmers, made decisions about terrace construction, as this exchange in a planning meeting indicates:

Terrace construction threatened the existing economic, social, and moral order

Male farmer: *I planted my coffee trees in a zigzag pattern, so how will terraces affect them? I see that my coffee is already producing and giving me enough of a harvest. So do I have to cut them to build terraces and then plant coffee all over again?*

TFAP facilitator: *We will bring agricultural experts.*

This was a double-edged promise because although the experts' involvement ensured well-engineered terraces, the policy increased the farmers' insecurity. The farmers of North Pare had seen more than four decades of shifting land use policies, and they had little faith that the TFAP terracing campaign would be the last, as this quota-

tion suggests:

"When I was in school, I was taught that there were four kinds of terraces. Since then the required kind of terrace has been changing, so we farmers are afraid that in ten or twenty years we will find that our work was wasted and we'll have to build yet another kind of terrace."

The authoritarian style of the Tanzanian government in the 1970s and 80s continues to shape current land use decisions because those decades of arbitrary policy-making and coercive implementation have entrenched distrust and skepticism deep in North Pare's political culture.¹² Agricultural extensionists and development agency facilitators often described their task as modernizing traditional agricultural practices, and they therefore rejected indigenous soil conservation measures. For example, the pre-colonial stone-lined terraces of North Pare did not satisfy the experts:

The farmers in [village name withheld] are afraid of terraces because they think that if they bring an agricultural expert to their farm, this man is going to measure things and tell him to get rid of the indigenous terraces that he got from his father, and is his inheritance. It's better to refuse any involvement with those people and not risk losing what you already have. These experts should come to advise us how to improve the indigenous terraces rather than advocating new ones.

Given that TFAP had identified one of the major constraints on North Pare's agriculture as the disappearance of traditional knowledge,¹⁴ it is surprising that the agents of development were undermining indigenous techniques rather than building upon them. Whenever I heard the participants in planning meetings ask if indigenous terraces fulfilled TFAP requirements, the answer was

always the same: "only if they are measured and approved by the experts." Although most indigenous soil conservation structures are close to level, few have the precision that agricultural extensionists demanded. This single-minded technocratic approach to



Figure 2. Indigenous stone-lined terraces in North Pare, June 2004 (Courtesy Michael Sheridan)

(supposedly) participatory development planning led to doubt and resentment.

The second problem with terracing in North Pare was the social disorder that this sort of agricultural intensification created. A web of social relationships frames landholding in North Pare, and terracing disturbed the stability of this web. Pare farmers currently categorise landholding into borrowed land, tributary land, clan land, and government land, and the latter are usually un-arable areas. Borrowing land involves an informal agreement to cultivate an annual crop for one or two seasons. Most of these arrangements are made between women from different villages concerning small plots of beans, maize, and sweet potatoes. Women will not invest their labor in terracing a borrowed plot, and the women who lend land (or arrange the loan with a male kinsman) do not want to build terraces because this

women fear that if they terrace the clan land that they cultivate, their husbands will capture the benefits and leave them to increase production on less fertile land or face food shortages

would force them to deny that land to their borrowing friends in the future. Few farmers build terraces on tributary land for similar reasons. Most of these relationships concern men, and the farmer can negotiate to plant permanent crops such as coffee. Although annual payments

of tribute (in beer, crops, and increasingly cash) theoretically secure all rights in land for the tribute giver, the government's populist land policies – which enhanced the principle that current use confers land rights – has shrunk the social distance of these contracts to close kinsmen in the past few decades. Even those with secure tribute relationships do not want to build terraces on this land, however, because few landowners (many of whom are absentee city-dwellers) still allow tributary relationships to be inherited. A terrace-building tribute payer would therefore get increased short-term yields without long-term security. Although clan land ownership is relatively secure in North Pare, terracing is still not easy because the division of labor by gender makes it unpopular with women. Women fear that if they terrace the clan land that they cultivate, their husbands will capture the benefits and leave them to increase production on less fertile land or face food shortages, as this quotation from an elderly female farmer indicates:

"If a woman builds terraces, what happens to the land? She has to give the terraced farm to a man, who will grow fodder, trees, or vegetables. Women with strength build terraces and give them to their husbands. Men have more skill with cash crops."

Overall, then, planners' efforts to enhance household food security threatened the social relationships upon which it depends.¹⁵

The third problem with terracing in North

Pare was moral disorder. The potential loss of permanent crops, skepticism about the longevity of policy, and the disruption of existing social relationships in land all prevented the terraces from being recognised as morally proper, a condition which many people in North Pare label 'cool.' For example, farmers say that a plot of land acquired by force or deception will only bear poor harvests because of its lack of 'coolness.' Even a technical matter such as measuring terraces has a moral dimension, because quantification disrupts the moral order that makes assets productive. When TFAP conducted a socio-economic survey in 1994, researchers found that many farmers refused to have their fields surveyed because they believed that "things counted or measured get damaged soon after."¹⁶ The same cultural logic applies to terraces and increases farmers' doubts about the return on their labor investment. This is also why some farmers say that the new terraces are not peaceful because they accentuate the social differentiation that has already resulted from decades of socio-economic change:

"These days the government and the donors are bringing war and rivalry to the land because they are making everyone build terraces, and that's just going to create divisions between those with labor and those without."

Opposition to terrace construction was therefore not simply because of misunderstanding (the reason cited by development agency extensionists), laziness and ignorance (the reasons cited by government officials), or North Pare's labor shortage (the reason often cited by area farmers).¹⁷ It combined profound doubt about the agro-ecological continuity of individual farms, the

Opposition to terrace construction... combined profound doubt about the agro-ecological continuity of individual farms, the social continuity of local relationships in land, and the moral continuity of society itself.

social continuity of local relationships in land, and the moral continuity of society itself.

The ambiguity of land use planning

As TFAP has discovered, these are formidable obstacles. In addition to providing direct material inputs, their strategy for implementing an unpopular programme was to create participatory institutions for local development planning. TFAP selected target villages and organised Land Use Planning Committees at the village, ward, division, and district levels of these areas of the North Pare highlands. I attended 13 meetings of Village LUPCs, two meetings of a Divisional LUPC, and two meetings of the District LUPC in 1997 and 1998.¹⁸

TFAP designed the LUPCs to be participatory institutions that could supplement and enhance the planning and implementation activities of the local government. Officially, the role of the committees was "to further the identification of environment-related problems with villagers, to work out solutions, and to supervise the implementation of activities accordingly."¹⁹ Specifically, the LUPCs developed SWC work plans, resolved resource conflicts, and proposed by-laws concerning village land use.²⁰ The development agency's demands for local participation and quick results set up a contradictory situation in which supposedly 'empowered' local institutions found themselves powerless. The political flaws in these new institutions increased the ambiguity of resource tenure in North Pare, and this creeping insecurity undermined the project's search for sustainable land use.

Each village committee was chaired by a respected elder (usually male) and generally consisted of five to eight men and women. TFAP facilitators and government extensionists also attended meetings, and usually set the agenda. Interactions among the committee members were informal and friendly

unless a government official attended a meeting, in which case increased formality imposed communicative rules.²¹ At many meetings, participants divided themselves by gender and the men's side dominated the discussion. The women often functioned like the chorus in a Greek tragedy, by replying in unison with clucks and murmurs to the male leaders' statements.

Each meeting opened with welcoming statements by the committee chairman and a "three kilo clap" (a common political ritual in Tanzania and Kenya, in which participants clap three times to open or close a meeting). Once the meeting was convened, however, TFAP facilitators set the agenda. They did not do this by force of personality or because the village LUPC lacked issues to discuss. TFAP facilitators dominated village LUPC meetings because TFAP provided them with lists of criteria by which the project evaluated its progress. All village LUPC meetings fed into bimonthly Divisional LUPC and quarterly District LUPC meetings, so most village committees spent their time preparing for these meetings. TFAP pressed the village LUPCs to quantify their activities by reporting how many of meters of terraces were built in the village during a calendar year, how many private tree nurseries were established, and how many protection markers were placed on riverbanks. The TFAP facilitators therefore functioned to filter out the villagers' qualitative concerns (such as a labor shortage, insecure land tenure, or pest control), so that they could efficiently fulfill their primary task of collecting quantitative data. The villages rarely fulfilled project expectations, so most committee meetings turned into long discussions of why, who to blame, and how to present these failures to the Divisional and District committees. Committee members found meetings frustrating because they spent so much time finding explanations for their inability to meet project expectations, which then gave the meetings a negative tone.²² In several of the meetings that I attended, committee

members resolved the frustrating process by simply asking the TFAP facilitators to stop trying to empower them and just tell them what to do.

The TFAP facilitators had no real authority, so they made full use of shame to goad the committees into action. Their most common exhortation technique played on a core value of North Pare culture — treating a guest with hospitality and grace. “What would you say,” the facilitators asked rhetorically, “if the Germans came and asked you to show them the terraces you had built, and you had nothing to show?” Many meetings culminated in resolutions to write to the village government and ask the village chairman to write letters to farmers who had not implemented the TFAP plan. None of these resolutions and letters had any real coercive power and were instead based on the subtle threat of public shame. Village LUPC meetings closed with another “three-kilo clap” and everyone hurried off to other pressing tasks.

The top-down nature of bottom-up participatory planning became particularly apparent when TFAP decided (in early 1998) to sidestep some weak village governments by going directly to the hamlet (an administrative unit within a village) level for planning meetings.²³ In one hamlet meeting, the TFAP facilitator presented the members with a form with blanks for how many meters of terrace they would build, the names of the springs they would protect, and how many trees they would plant. He asked the meeting participants how many households there were in the hamlet and suggested that each should construct 50 meters of terraces. The line of women sitting on the grass (opposite a line of men on benches) had trouble visualizing what 50 meters meant, and after ten minutes of discussion the members decided that it was equivalent to two terraces per plot. The facilitator still needed a number to write on the form, so the meeting debated several round numbers before the loudest



Figure 3. The author with a village Land Use Planning Committee, May 1998 (*Courtesy Michael Sheridan*)

man said “just write 3000 meters.”

The meeting participants told the facilitator that they didn’t need a number, but that they wanted tools and fertiliser for the new terraces. The facilitator responded by telling them to form a cooperative labor group in order to receive tools. The men in the meeting agreed, and decided that the women at the meeting would form such a group immediately. As the meeting secretary wrote their names on a list for the facilitator to present to TFAP, the women remained silent and stiff because they obviously did not want to make this commitment, but were powerless to protest in public.

Although TFAP wanted the village LUPCs to be active agents for increasing awareness of environmental issues in their villages and for developing innovative solutions to these problems, the agency’s top-down technocratic practices effectively stifled the committees’ ability to voice local problems. At many of the meetings that I attended, committee members presented innovative ideas which facilitators either rejected outright or ignored. Many proposed new benefits for project participants, such as improved livestock breeds, seedlings for flowering trees that would attract honeybees, traps for the area’s enormous rats, and colorful clothing

with the project logo as rewards for successful terracing. TFAP personnel rejected these ideas because they perceived them as unreasonable demands for which they had no budgetary allocation. When I described these ideas to the German expatriates who manage TFAP, they were dismayed to learn that good ideas were not reaching them. The core problem was that many of the environmental problems and solutions raised in the LUPCs were not, strictly speaking, directly related to TFAP's mandate as a forestry and SWC project. Rejecting local ideas prevented "mission creep" and the creation of new tasks for busy agency staff, but it also quashed participation and led committee members to ask one another, "Why are we having meetings if we present our recommendations and nothing happens?" Many village LUPC members analyzed the ambiguities of participatory development with remarkable candor and acuity, as this sample indicates:

"The local government officers, from the District Commissioner down to the village level, do exactly what TFAP wants them to do because they all know the local government needs the money. But the project is "bottom up" in its approach, so it's supposed to be doing what we farmers want to do, not just what the government wants. So TFAP tries to get opinions from those without the authority to give them while implementing its plans through people who aren't supposed to influence the process."

Although agency practices regularly prevented genuine participation despite their policy commitment to "bottom-up planning," it was the political ambiguity of the LUPCs that systematically prevented them from fulfilling the goals that TFAP set for them. Village LUPCs were formally advisory bodies for the village government, but the tasks that TFAP assigned them required the authority of government. TFAP tried to overcome this contradiction by inviting village chairs and Ward Executive Officers into the membership of

the LUPCs. For the few villages with committed leaders, this informal arrangement allowed village LUPCs to become moderately effective. In most villages, however, village chairmen (which are unpaid positions) were reluctant to become involved in yet another time-consuming committee. When government leaders were not active in conservation activities, the village LUPCs became trapped in the political quagmire of having an agenda without anyone to implement it.²⁴ "We have no people, only the village chairman has people," one village LUPC chairman told me. "We have no power to compel people to attend or to do anything." To avoid such situations, committees struggled to arrange for the already over-committed government officials to attend every conservation activity. They rarely succeeded.

It was the political ambiguity of the Land Use Planning Committees that systematically prevented them from fulfilling the goals set by the Tanzania Forestry Action Plan

The political ambiguity of the LUPCs was clearly expressed in their inability to perform the basic political action of a Tanzanian institution. The essence of a superior position in the local hierarchy is the ability to summon an underling to a meeting. The verb for this action in Kiswahili, *kuita*, also means "to name or identify," and commonly finds its political expression in formal letters from superiors to inferiors. Village LUPCs had few powers to summon, name, and identify, which meant that they could not fulfill their function of helping village governments to regulate land use. Committee members often complained that they could not send letters to invite leaders to meetings or to notify farmers that they were violating land use regulations. Sending such a letter would have formalised the communication and put the committee in a superior position to the village leadership. Most village committees therefore did not compel village leaders to attend meetings and therefore had no power to make decisions about rule-break-

ers without their presence. For example, in one village LUPC meeting the committee discussed the boundary markers around protected springs and riverbanks. The village LUPC secretary said that "everyone is pulling up the markers." The TFAP facilitator asked if she knew who was doing this. She said, "no, but the village government knows them." She told me later that she knew who had pulled the markers, but that she did not have the authority to name names.

These political and geographic ambiguities ran through all levels of the LUPC system in North Pare because environmental issues regularly crossed village boundaries. Rivers are particularly difficult resources to protect because they often form those boundaries. When a village LUPC on one side of a river tries to implement the TFAP plan and the adjacent village has no LUPC, committee members find themselves in the odd position of protecting only half of a river. The following exchange at a District LUPC demonstrates some of the political wrangling that resulted from ambiguous lines of authority:

Village LUPC chairman: *No one is showing up for riverbank protection activities. The river is the boundary between two divisions and many farmers are not interested in the project. Many of the farmers in my village and in the adjoining village have plots on both sides of the river.*

Ward Executive Officer: *The problem is who can call whom. Can our Divisional Secretary call the Secretary of another Division? Can one village call another? These are government matters.*

Village LUPC chairman: *So what do I do? We are under the TFAP project, so how can I write a letter to another village if they have no committee?*

Ward Executive Officer: *Then this issue must go to the Ward Development Committee and follow normal government channels to deal with this other village. We must find the right person to write a letter to the vil-*

lage government. Only the Ward Development Committee can give orders to a village chairman. This is only a TFAP meeting, it's not about governance.

The semi-official nature of the LUPCs also intersected with the complexities of borrowed and tributary land arrangements to produce enough bureaucratic red tape to prevent terracing. The following field note from a village LUPC meeting demonstrates the obstacles for cooperation among inter-dependent villages:

"I asked what the major land use problems were in Bondeni village. They replied that the two major problems are labor shortage and the fact that many farmers in Bondeni come from outside of the village. Where do these outside farmers come from, I asked. Every other village. So I asked if many of them come from Ngujini. Yes, they do. Do they build terraces here? No. But why don't they build terraces in Bondeni if both Bondeni and Ngujini have LUPCs? "Ngujini people don't build terraces in Bondeni, they only build them near their homes in Ngujini." The LUPC chairman said that they decided to deal with these "outside" farmers at their first meeting. He said that they advised the village government to tell those people, "if you don't terrace these farms and conserve the soil, you'll lose your farm and we [the village government] will plant trees there." But the Bondeni village government has no authority over residents of another village, so Bondeni has to get Ngujini to make these Ngujini farmers to build terraces in Bondeni. The TFAP facilitator closed the discussion by saying that the people of Bondeni were not setting a good enough example, and that they should terrace their own areas first, then get the divisional government to resolve the issue. Afterwards one village LUPC member said that it is absurd to force a farmer to terrace a plot when the adjacent plot remains un-terraced." TFAP intended the advisory role of the LUPCs to be a strength, but it became a liability because ecological problems are necessarily political

ones.

The political ambiguity of the LUPCs made many people evaluate them as morally ambiguous. North Pare residents evaluate the morality of development interventions based on an egalitarian expectation that benefits and limitations should be distributed equally, which should theoretically lead to a state of conflict-free 'coolness.' But village LUPCs had the difficult task of regulating land use within administrative units despite the awkward fact that the social relations of land use usually crossed administrative boundaries. This meant that LUPC strategies of coercion, use of shame, and weak threats of legal action often led to jealousy and resentment instead of compliance. For example, one farmer I know was growing taro in a spring that her village LUPC wanted protected. When she asked TFAP facilitators if she could replace the taro with a permanent crop that would inhibit erosion (such as fodder grass or fruit trees), they refused. Her sense of injustice led her to perceive a definite lack of 'coolness' in the protected spring, so she believes that the spring is bound to dry up. The ambiguities and contradictions of the LUPCs therefore undercut precisely the sort of locally legitimate political and ecological order that they were required to create.

Conclusions

Land Use Planning Committees were weak in North Pare because the development agency that mandated them ignored local political processes and cultural norms. The efficacy of these new techniques and new institutions for community-based natural resource management suffered because TFAP's technocratic management style prevented communication of local needs, values, and expectations—the essence of grassroots participation. Second, terracing was a feasible but problematic solution to land degradation because it brings technical, social, and moral problems for the farmers who build terraces, and the development

agency was largely unaware of these problems. Third, the new social institutions created to implement these solutions were not genuinely participatory and usually lacked the political authority and moral legitimacy to effectively convince farmers to use SWC techniques. The resulting situation did compel some farmers to build terraces, but it did not foster the social harmony that many in North Pare hold as fundamental to agricultural fertility, improved land use, and authentic development.

This case study of the contradictions in community-based natural resource management suggests that a *political and cultural analysis* of the technical, social, and moral quandaries faced by resource users can illuminate some of the pitfalls of the CBNRM approach. This analytical framework is useful as a forensic tool for picking apart project failures, and does not provide a clear and straight path through the thickets of contradiction and ambiguity that CBNRM entails. Land rights, economic responsibilities, social processes, political contests, and cultural values vary widely and harmonious communities characterised by consensus and conformity are very hard to find – which therefore suggests that successful CBNRM may not be readily transferable. The devolution of resource management authority to community-level institutions is, however, one of the best options for ameliorating the contradictions of neo-liberal economic globalisation. If more planners and administrators can avoid the conceptual assumptions of sameness and unity built into the category of 'community,' a more technically effective,

a political and cultural analysis of the technical, social, and moral quandaries faced by resource users [is needed to] illuminate some of the pitfalls of the CBNRM approach.... [yet]...the devolution of resource management authority to community-level institutions [remains] one of the best options for ameliorating the contradictions of neo-liberal economic globalisation.

socially informed, politically participatory, and morally legitimate version of CBNRM could be constructed by identifying and anticipating the contradictions, conflicts, and ambiguities that exist in all communities.

Anthropology has been promoting the culture concept as a way to make sense of human difference for over a century, and it has been moderately successful at pushing both scientific understanding and public policy away from the racism that characterised 19th century analyses. This classical approach to culture was that it was homogeneous, collective, cohesive, intrinsic, geographically bounded, and an essential trait of a community. This was a useful approach in the late 19th and early 20th centuries, but such a definition is clearly obsolete in a rapidly globalizing world. Many anthropologists are therefore redefining the discipline's keyword as a heterogeneous, contested, open-ended, flexible, and power-driven economic, political, and ideological process.²⁵ Conservation practitioners can benefit from this academic reorientation by using the concepts of contestation and ambiguity in the economic, socio-political, and ideological-moral domains of 'culture' to redefine their own keywords of 'community,' 'development,' and 'management.'

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Notes

- ¹ Esman and Uphoff, 1984; Ostrom, 1990.
- ² Western *et al.*, 1994.
- ³ Brosius *et al.*, 1998.
- ⁴ Little, 1994; Peters, 1996.

- ⁵ This article is based on one year of ethnographic research in 1997 – 1998 for my dissertation at Boston University (Sheridan, 2001), with support from the Wenner-Gren Foundation for Anthropological Research and the Fulbright Programme. Two months of follow-up research in June and July 2004 allowed me to corroborate my conclusions with North Pare farmers and former development agency staff. I thank the people of North Pare and the staff of the TFAP-North Pare project for their openness and generosity.
- ⁶ This degradation crisis is a system of assumptions that is not supported by archival and oral historical evidence. See Gillson, Sheridan and Brockington, 2003.
- ⁷ The Traditional Irrigation Improvement Programme (TIP), funded by the Dutch agency SNV, is also active in the North Pare highlands on SWC issues (Sheridan, 2002). For the sake of brevity, however, I have limited my discussion in this article to TFAP activities.
- ⁸ Masuki and Bakuti, 1994.
- ⁹ Glückert, 1994. Many areas show direct evidence of severe erosion. Vegetation that once stabilised riverbeds is now gone, and the water flows over boulders and bedrock. Nearly all ridgelines completely lack layers of humus and topsoil, and these layers' gravel remains atop an exposed layer of subsoil. In the most severely eroded areas, eucalyptus grows without any soil at all because it can drill its roots into the crumbling gneiss that remains.
- ¹⁰ Bench terraces require farmers to convert a sloping plot into a series of step-like strips of land. The wall of each terrace is stabilised with a strip of a fast-growing grass which also provides fodder for livestock. To make *fanya juu* terraces, farmers dig a shallow trench perpendicular to the fall line of the hillside and throw the soil on the uphill side of the trenches to form ridges. After several years, rain washes the soil from the back of the terraces to the grass-covered ridges, and the terraces level themselves as long as the farmer maintains the trenches' uphill walls.
- ¹¹ Humann-Bellin, 1996: 35.
- ¹² Other administration officials were less subtle. Many farmers told me that they had attended meetings in which officials threatened to take away their land if they refused to build terraces (and reallocate it to someone who would).
- ¹³ Sheridan 2004.
- ¹⁴ TFAP, 1993.
- ¹⁵ There was a similar situation in the Usambara Mountains of Tanzania in the 1950s (Feierman, 1990: 181). The colonial government's demand for terraces under the Usambara Scheme led to widespread protest, passive resistance, and anticolonial activism. Usambara farmers opposed soil and water conservation because terrace-building threatened to deny land to the poor and ultimately create a landless class. Much like the scenario in contemporary North Pare, women feared that building terraces amounted to giving land to men for cash crop production.
- ¹⁶ Glückert, 1994: 9.
- ¹⁷ One researcher, Zainab Semgalawe, has identified the social and economic variables that encourage North Pare farmers to adopt soil and water conservation techniques (Semgalawe, 1998). She argues that the area's labor shortage has a negligible effect on the adoption of SWC techniques, and that the major determinants are the head of household's education level and participation in development activities. Most of my informants, however,

- cited labor shortage as a critical limitation on terrace construction.
- ¹⁸ I have withheld the names of the participating villages and divisions in order to protect my informants from political repercussions.
- ¹⁹ TFAP, 2003.
- ²⁰ Engleberg and Mwanvi, 1997. In theory, the village LUPCs discussed environmental issues amongst themselves and used a three-dimensional model of their village to plan what they should do and where. Despite TFAP's rhetorical allegiance to participatory and "bottom-up" planning, however, in practice the committees worked to fulfill goals predetermined by TFAP, while the village models were used only when senior TFAP staff visited.
- ²¹ For example, meeting participants switched from the local language to Kiswahili during meetings because the latter is the "language of the government." When a village chairman was present, village LUPC chairs deferred to their higher authority and language use became more structured with honorifics and formal turn-taking.
- ²² One man capped a long discussion about his committee's failure to inspire other villagers to set up private tree nurseries (for which there was no market because TFAP gave seedlings away for free), "I see that what we're really doing is finding something to write in the blank on the project form, so why does it matter why there aren't any more nurseries?"
- ²³ After a TFAP facilitator had explained the new approach for encouraging more localised planning during one meeting that I attended, the village chairman immediately thanked the facilitator and explained that he would develop plans and distribute them to the hamlets.
- ²⁴ If a village LUPC wanted to keep villagers from cultivating in water sources and on riverbanks, TFAP told them to report the offenders to the local court. The lawbreakers paid the ridiculously low fine of Tsh 500 (which was a significant sum in 1984, when the conservation by-laws were enacted, but has not kept pace with the devaluation of the Tanzanian shilling), and then file countersuits on the grounds that only administrative officers can file charges in court and that the village LUPC is not a government institution. The usual result was that the village LUPC dropped the suits or compensated the offenders for their time in court.
- ²⁵ See, for example, Keesing, 1994 and Brumann, 1999.
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The Shompen of Great Nicobar Island (India)— between “development” and disappearance

Suresh Babu and Denys P. Leighton

Summary. The Shompen are an indigenous people of Great Nicobar Island, India, inhabiting a biosphere reserve. They number perhaps 250 individuals and face formidable social and environmental challenges. Encroachments by non-tribal people, invasive species and poaching are among factors leading to habitat destruction, species loss and observable ecosystem disruption in the reserve and on the island. The Indian government is committed to safeguarding the livelihoods and cultural identities of indigenous peoples and to “developing” tribal societies in step with the rest of the nation. Officials, however, typically see the “protection” of indigenous peoples and the preservation of natural environments as separate problems. They have paid some attention to the idea of community conservation, but a dilemma that appears to arise in the case of the Shompen is how to enlist or elicit the participation in conservation of people whose valuation of natural resources and the environment is “primitive” and non-monetary. This paper provides an overview of the recent environmental history in connection with the human history of Great Nicobar and examines policies and recommendations applying to protected environments and tribal populations in India. It adopts a social ecology approach, indicating how tribal and non-tribal populations on Great Nicobar play different economic roles and have different stakes in ecosystem services. The paper argues that regulatory authorities, scientists and other external observers must take *local knowledge systems* more seriously. First, our understanding of the island ecosystems can be enriched through engagement with indigenous knowledge, as local people can provide key insights into the dynamics of the environment they inhabit. Second, without understanding how the local people value their environment it will be difficult to reach an agreement on conservation objectives between them and external parties.

The Shompen tribal people of Great Nicobar Island are today at a crossroads of tradition and modernity. Occupying the southernmost island (1045 sq. km. in area) of the Andaman-Nicobar archipelago (ANI), more than a thousand kilometers from mainland India and 150 kilometers from Sumatra in Indonesia, the Shompen are recognised by the Indian government as a Scheduled Tribe and a Primitive Tribal Group. The Shompen are

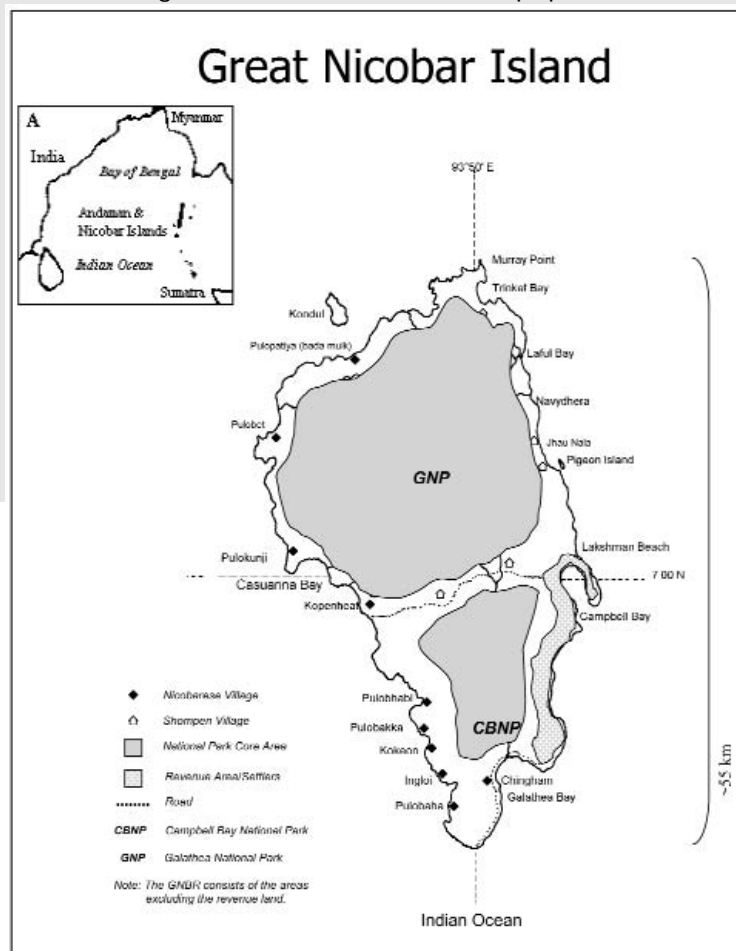


Figure 1. Map of Great Nicobar Island showing the tribal settlements and protected areas.



Figure 2. View of Great Nicobar Biosphere Reserve from Mt. Thullier. (Courtesy Suresh Babu)

afforded specific constitutional and administrative protections not only because they are “scheduled” but because the state regards them as attached to a “protected” physical environment. About eighty-five percent of Great Nicobar was designated as Great Nicobar Biosphere Reserve (GNBR) in 1989 by India’s Ministry of Environment and Forests, in accord with the UNESCO Man and Biosphere Programme (MAB). MAB specifically states that one function of biosphere reserves is to “ensure the traditional [human] resource use patterns.”¹ In establishing the GNBR the Indian government has recognised the global significance of Great Nicobar’s ecosystems and has signalled a commitment to preserving human micro-cultures being eroded by modernity.

Indeed, the crisis facing the Shompen is not to be downplayed, given the recent history of the region. The Great Andamanese, one of six remaining tribal societies inhabiting the ANI, numbered only twenty-eight individuals in the 1991 official census, reduced from 625 in 1901.² The Jarawas of the Andamans are another threatened population, despite having been given protection,

mainly through land reservations, since the 1950s. The Shompen population is larger than it was thirty years ago but the Shompen represent a shrinking segment of the total population of Great Nicobar (see Figure 3). Their way of life is certainly endangered. Rapid increase in the island’s non-indigenous human population, unsustainable agricultural and commercial activities bordering the biosphere reserve, and sometimes impinging upon it, and illegal activities, such as poaching, by non-tribal people have contributed to habitat destruction, species loss and other observable ecosystem instability on Great Nicobar.³

Government policies with respect to protected areas in ANI and elsewhere in India incorporate some of the principles advanced in environmental policy circles, by ecologists and by advocates of indigenous peoples. Yet, policy-makers have privileged the idea of national (social) development—and the removal of social inequalities—over preservation of cultural diversity or environmental conservation. Upon India’s independence, there existed a consensus that a crucial function of the state was to coordinate efforts to lift up “backward” social groups, those suffering legacies of discrimination and deprivation. The Constitution of the Republic of India in 1950 thus recognised not only Scheduled Castes but also more than six hundred Scheduled Tribes in need of “development”. In 1979 the gov-

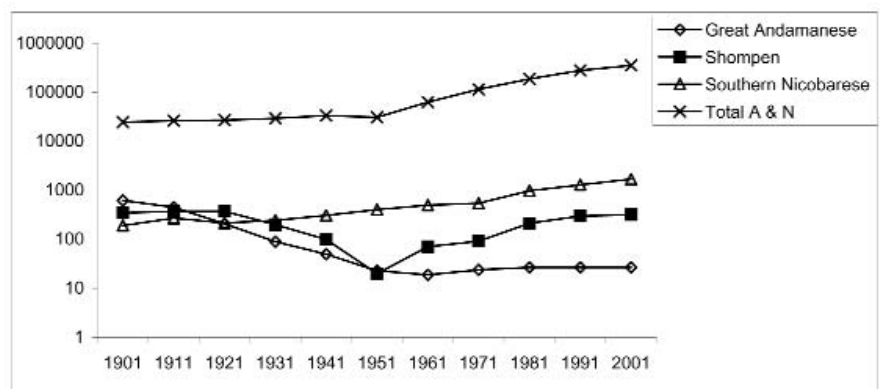


Figure 3. Graph showing the growth of populations of ANI. Note that the populations are in log scale.

“Tribals should be allowed to develop according to their own genius” and development “should be undertaken without disturbing tribal social and cultural institutions.”

ernment identified a sub-category of seventy-five Primitive Tribal Groups, including the Shompen, requiring special attention.⁴ The Nehruvian *Panchasheel*— Prime Minister Jawaharlal Nehru’s “five virtues” or guiding principles of tribal policy— announced in 1952 that “Tribals should be allowed to develop according to their own genius” and that development “should be undertaken without disturbing tribal social and cultural institutions.”

Such progressive statements, however, sit uncomfortably next to the rhetoric—and the actual practice—of Indian development. Observers both within and outside India have attacked the various Planning Commissions, the (supposedly) over powerful and politically insulated bureaucracy and other elite agencies of social planning. Indeed, some have thrown into question the very notions of national development and modernity that expressed the ethos of the Nehruvian state.⁵ Nehru himself pronounced hydroelectric dams the “temples of modern India”, and many development objectives from the 1950s were pursued without proper consideration for environmental impact, while some conservation measures, such as the famous Project Tiger, were undertaken with little regard for social impacts. In contrast, some policy-makers today have accepted the idea that “natural” environments are indeed cultural landscapes. Indian officials and politicians have been moved to this realisation by political realities; there are political prices to be paid for barring local human communities from designated protected areas. Conservation

authorities have also learned that ecological stability of protected areas depends in some cases on anthropogenic activities. For instance, the experience of the Bharatpur Bird Sanctuary, a flagship conservation experiment of the 1960s, revealed that the (artificial) wetlands that attracted dozens of species of birds became choked with weeds, leading to significant loss of ecological functions, when the grazing of cattle was prohibited in the sanctuary.⁶

Kuhou and Katpui were a Shompen couple that I had a chance to interact with closely while I was involved in the ecological surveys of the GPNR on the West Coast. Kuhou used to work on the coconut plantations in the Nicobarese village of Kopenheat for a man called Chintaan, and he also worked occasionally at Pulokunji for Chintaan’s brother. Kuhou still hunted in traditional Shompen fashion. On several occasions he had eaten with us in our temporary camps. I remember the toddy that he offered us the evening before we left for Campbell Bay. I visited him again early in 2001 at Pulokunji. He seemed surprised to see me there. There were seven people in that village: Chintaan’s brother, Kuhou, Katpui and her two children, and her sister and sister’s child. When I visited Great Nicobar in November of that year, I learned that all of the people of Pulokunji had died after drinking from a bottle that had washed up on the shore. A lot of flotsam washes up on the west coast during that season. They probably thought it was liquor. All of them soon died, with the exception of two boys, aged eight and twelve, who survived alone for twelve days. The nearest habitation was Kopenheat (twenty kilometers away) and they could not have crossed the two rivers without a hodi. A naval vessel found the dead bodies and brought the two living children to Campbell Bay. The boys have been resettled to a Nicobarese village, Chingham. Pulokunji, which Boden Kloss had mentioned in his narrative a hundred years earlier, had been wiped out.

There has been little serious challenge to the idea that indigenous (“tribal”) people have a strong ethical claim to remain in or near the landscapes they have inhabited for generations, and apart from which they would lose their livelihoods and their cultural distinctiveness. At the same time, the

emphasis of Indian tribal policy until quite recently has been on “mainstreaming” populations and combating “backwardness”, on bringing tribal people into conformity with national standards of economic participation, diet, health, housing, access to safe water and electricity, education, and so forth. This goal has been articulated through the language of national “development” in a manner that is difficult to reconcile with accepted conservation principles and that often contradicts the government’s own stated ideal of preserving cul-

tural diversity. Such policy contradictions are especially problematic in cases like that of Great Nicobar. This paper provides an overview of the recent environmental history of Great Nicobar and notes ecological problems and complications of development identified by natural scientists, social scientists and other experts. It examines policies and recommendations applying

Where the gap between worldviews is wide, however, there is little basis for negotiation, and environmental management consists mainly of external agents defining both problems and solutions

to protected areas and tribal populations. One of the ironies highlighted here is that the physical isolation of the Shompen, compared to many other tribal peoples in India, means that “protection” of Great Nicobar has consisted mainly of measures taken by central and state governments to control external influences (*e.g.*, immigration, resource exploitation, invasive species, pollution). This same isolation, however, means that there exists at present only a narrow basis for communication and negotiation between Great Nicobar tribal people and other stakeholders in the protected area, including the national state.

Community management is the current mantra of environmental policy, and there are indications of the promise of community-conserved areas and community managed areas in India, as elsewhere.

However, for local communities to be actual players in conservation and management, the criteria of “participation” need to be understood by all parties whose participation is being solicited by authorities who have until now regarded themselves as environmental managers. Where the experiential gap is not wide between managers and regulatory officials, and the differentially empowered members of those communities, the principles and goals of management can be contested and consensus achieved. Where the gap between worldviews is wide, however, there is little basis for negotiation, and environmental management consists mainly of external agents defining both problems and solutions.⁷ While conservationists advocate participatory and democratic management strategies, many nevertheless assume that it is both ethical and practical for members of indigenous and other isolated populations to be brought around—gradually—to the viewpoint of modernity.

The cultural landscape of Great Nicobar

Great Nicobar is largely covered by tropical rainforest and has five perennial rivers. The GNBR encloses two national parks, Galathea National Park (225 sq. km) in the south of the island and Campbell Bay National Park (520 sq. km) in the north. Great Nicobar displays high levels of endemism and extraordinary diversity at species and community levels. Studies of species interaction in ecosystem processes and of mechanisms of species coexistence on Great Nicobar are still at a rudimentary level. Fifty years ago there were no large mammals on the island other than humans. Today, however, cattle forage at the edges of the rain forest and help pave the way for invasive plants. Ironically, the nutrient content of the island’s soils is generally poor: plant detritus is rapidly broken down through microbial activity and nutrients are delivered to above-ground biomass, rather

than being fixed in plant root systems and soil.⁸ Great Nicobar's lushly "fertile" appearance and its "infertility" with respect to many intentionally introduced plant species have complicated issues of tribal protection, immigrant settlement and economic development in recent decades.

The indigenous inhabitants of Great Nicobar are the Shompen and the Nicobarese. The ANI (Protection of Aboriginal Tribes) Regulation of 1956 recognised their exclusive right of settlement on Great Nicobar. Indeed, there were no permanent non-tribal residents of the island until the late 1960s, when the government permitted limited additional settlement for strategic reasons involving territorial claims by Indonesia. The Nicobarese of today are numerous also on neighboring islands and they outnumber the Shompen on Great Nicobar by approximately three to one, although a century ago it was the Shompen who were the larger group on the island.⁹ Nicobarese have interacted for decades with non-tribal populations for economic and other purposes and the government does not count them among the Primitive Tribal Groups. Nicobarese are mainly fisher folk but they also cultivate coconut and areca in "plantations" sometimes including several thousand trees. Nicobarese are settled along the west coast of the island and many of them periodically visit the only township on the island, Campbell Bay, to collect rations provided by the government, including rice. They trade gathered or cultivated produce in the Campbell Bay market for additional rice and other items.

Since the 1980s they have attended schools at Campbell Bay and at Pulobhabi, the largest tribal village on the west coast. Some make use of primary health facilities at Campbell Bay.

The Shompen economy is literally a subset of the ecosystem they inhabit.

The Shompen inhabit primarily the interior of Great Nicobar and an area near the northeast coast and they do not live elsewhere in ANI.¹⁰ They cultivate *tacca* (a tuber), aroids, yams and sometimes bananas. A traditional staple is *pandanus* fruit, which the Shompen gather and process into "flour". Like the Nicobarese,

Table 1. Major plant resources of Shompen.

Plant species	Use
<i>Pandanus leram</i>	Dietary staple, 'bread fruit tree'.
<i>Tacca leontopetaloides</i>	Tuber is important source of food.
<i>Callophyllum inophyllum</i>	Timber used in boat-making.
<i>Ficus brevicuspis</i>	Inner bark used for making clothes and bark used in thatching huts.
<i>Pinanga manii</i>	Flooring for huts and spear shafts.
<i>Bentickia nicobarica</i>	Flooring; young meristems eaten.
<i>Nypa fruticans</i>	Hut thatching and woven wall mats.
<i>Canarium euphyllum</i>	Incense and mosquito repellent; edible gum.
<i>Morinda spp.</i>	Leaves and bark used to treat ailments of stomach.
<i>Sterculia spp. (3 species)</i>	Timber used in making dugouts (<i>hodis</i>); leaves of one species used in treatment of stomach ailments.
<i>Artocarpus chama</i>	Timber for huts and <i>hodis</i> .
<i>Ardisia oxyphylla</i>	Roots used as medicine.
<i>Garcinia nervosa</i>	Edible fruits.
<i>Dioscorea glabra</i>	Tubers eaten and seasonally cultivated.
<i>Sandoricum koetjape</i>	Roots are used in medicine, fruits eaten.
<i>Corymborckins veratrifolia</i>	Roots have uses in traditional medicine.
<i>Calamus palustris</i> and <i>C. andamanicus</i>	Principal sources of rattan in Great Nicobar.
<i>Hibiscus tiliaceous</i>	Inner bark used as twine: e.g., used in fastening spearheads to spear shafts.

the Shompen are increasingly giving up *pandanus* fruit for polished rice, although the latter is of inferior nutritional value. They are excellent workers with iron and make their own *dous* (machete-like instruments fashioned from iron slabs) and spearheads. Despite their recent and growing dependence on "imports", the Shompen have sustained themselves through wise use of natural resources. (For some plant products used by the Shompen today, see Table 1) Their economy is literally a subset of the ecosystem they inhabit.

The Shompen depend on the Nicobar wild pig as a food source, supplemented by the occasional salt-water crocodile, python, monitor lizard or sea turtle. The Shompen hamlets closer to non-tribal habitation have reported acute shortage of wild pigs. The 1972 Wildlife Protection Act prohibits non-tribals from hunting wild pigs, but poaching by outsiders is clearly jeopardizing the food ways of the tribal population. Nutritional deficiency correlates with disease susceptibility. The erosion of the traditional Shompen dietary pattern and food culture is well under way. The substitution of rice for *pandanus* is especially marked among the tribals living closest to the immigrant settlements. Settlers and other entrepreneurial outsiders tap the Shompen for rattan, bamboo, honey, lemons, bananas, coconuts, areca and other forest produce; the Shompen exchange these (often through the Nicobarese) for rice, cloth, liquor, tobacco, salt and metal for *dous*.

Disruption of Great Nicobar ecosystems

Deforestation and reforestation, extractive industry and settled agriculture have not generally been so damaging to Great Nicobar ecosystems as they have been to other parts of the ANI, as most of the surface and coastline of Great Nicobar has been made off limits to external entrepreneurs. Timber harvesting and mining have

been discontinued, although sand mining continues in several coastal areas. Sand mining and consequent coastal erosion have been identified as a threat to a remarkable but non-endemic species, *Dermochelys coriacea*, the Giant Leatherback Turtle. Great Nicobar contains major nesting sites of these and four other species of turtles. But coastal erosion may be less dangerous to the turtles than other threats. According to one recent estimate, perhaps seventy percent of Giant Leatherback eggs and hatchlings in ANI fall victim to feral dogs.¹¹ Some species endemic to Great Nicobar have seen visible declines over the past few decades. One of these is the Nicobar Megapode, *Megapodus freycinet nicobariensis*, a flightless bird that builds large colonial mounds on the ground; eggs and young birds make easy prey for feral dogs and cats. These birds have vanished altogether from the eastern coast of Great Nicobar (closest to the modern settlements) and they have become rare in all parts of the island.

The most visible alterations of the island's ecosystems have happened over the past thirty years due to ill-planned land use by settlers from mainland India.¹² The government settled a group of 337 ex-servicemen and their families on the eastern coast of Great Nicobar in 1969. Initially, 1,499.65 sq. ha. of forest were clear-felled for these settlers. The official allotment of land for each family was eleven acres.¹³ Traders, shopkeepers and service providers have joined these settlers. Only some settlers had direct experience in farming, but even among these many came from areas of India, like Punjab, whose climate and soil conditions are very different from those of Great Nicobar, and their agricultural practices were accordingly inappropriate. Some settlers have increased their land holdings by encroaching on forested land. To say that settler farming has been unsuccessful on Great Nicobar would be an understatement.

ment. Introduced food crops fall prey to myriad pests, thanks to the rainforest's diversity of insects. Most of the paddy fields made by the settlers are today either covered with weeds or waterlogged and saline.

Mainland India is spending (by conservative estimate) tens of millions of rupees annually to control the spread of invasive species, whereas the island ecosystems that are most vulnerable to such disasters have been largely taken for granted. Ships arrive in Great Nicobar from mainland India without any quarantine, bringing alien species along with grains, vegetables, poultry, livestock and other imports. Even twenty-five years ago scientists had noted the impact of invasives on Great Nicobar. Recent surveys undertaken by our team at the University of Delhi have identified forty-six exotic plant species on the island, of which twelve are well known



Figure 4. Agricultural area covered by weeds. (Courtesy Suresh Babu)

invasive species (see Table 2).¹⁴ Clearings made in the forest in recent decades offered multiple niche opportunities to invasive species; the invasives have spread extensively and made the soil unsuitable for agriculture. Though the nutrients in the soil do not support agriculture after a few cycles of cropping, they are enough to sustain enormous weed populations. Globally known terrestrial invasives such as *Chromolaena*, *Mikania* and *Ageratina* have covered clear felled areas on the island (See Figure 4).

Because they outnumber the tribal people of Great Nicobar by a factor of at least seven, and because tribals have been granted distinct rights and immunities (e.g., from provisions of wildlife protection acts), the settlers represent a separate political interest and they are able to make their needs known to government. The government undoubtedly spends much more money in supporting these settlers than the tribals—and the tribal population—contribute to the national economy.¹⁵ Commercial fishing has not been very profitable for *local* residents, although processing and storage facilities exist on a number of islands. (The waters surrounding Car Nicobar have been over fished. Some environmentalists have pointed to unsustainable hunting of seas turtles by Nicobarese and have suggested that, in

Table 2. Table of major invasive species in Great Nicobar Island.

Species	Spread and kind of impact
<i>Chromolaena odorata</i>	Has spread along open areas in the forest close to human habitation.
<i>Lantana camara</i>	Few clumps have been noted at 28-km point on East-West road.
<i>Ageratina spp.</i>	Weed with a creeping habit, covering most open fields.
<i>Merremia peltata</i>	Covers large patches close to streams.
<i>Ischimum rugosum</i>	Spreads over fallow land.
<i>Cyperus rotundus</i>	Occupies marshy land cleared and abandoned.
<i>Mikania micrantha</i>	Found around abandoned encroachments and forest edges.
Dogs	Numbering approximately 2100: a menace to sea turtles, Megapodes and wild pigs, as they have taken to pack hunting.
Cats	Threat to Megapodes and other ground birds, they are present in numbers matching those of dogs.
Cattle	Large number of cattle feed in the forest, destroying ground flora.

the cases of gravely threatened species, laws prohibiting wildlife exploitation by non-tribals apply to tribal populations as well.)¹⁶ As recently as the late-1990s many officials and politicians considered the expansion of tourism in ANI to be neither developmentally desirable nor economically feasible, but pressure has been building to open ANI to “high value, low impact” luxury tourism and eco-tourism. The Prime Minister himself chaired a 2003 meeting of the Island Development Authority (constituted by the Planning Commission) at which the future of tourism in ANI was a main topic of discussion, and business interests have taken

this as encouragement.¹⁷

It would be wrong to characterise Great Nicobar as either an ecological or a social disaster. Yet there are clear and present dangers apparent to the external observer. Ecological studies and biodiversity assessments have not proceeded far enough for experts to define clear conservation priorities for the island. Nor has there been any systematic attempt to learn about the tribal peoples’ understanding of their environment. In the absence of ethno-ecological or social ecology studies, even purely “external” ecological management of Great Nicobar cannot be effective; nor is it conceivable that community management can begin without conservation authorities’

appreciation of local knowledge systems. Recent environmental policies and administrative conventions include progressive and participation-enhancing features. However, statements about the roles of local, especially tribal people in environmental conservation continue to reveal tensions between ideals of development and protection of cultural diversity.

Environmental policy and tribal policy

Like their colonial predecessors, Indian government officials today habitually refer to tribal peoples’ “backwardness”.¹⁸ A “Draft National Policy on Tribals” circulated this year by the Ministry of Tribal Affairs (MTA, created in 1999) emphasises the poverty and deprivation of many of the country’s tribal people. While populations of Scheduled Tribes generally are

Jhau Nallah is the only existing Shompen village on the coast of Great Nicobar. There is no historical evidence of other Shompen coastal villages; the coast seems for a long time to have been the Nicobarese domain. Jhau Nallah therefore represents a variation in the Shompen lifestyle. The village leader is Agyon, who succeeded his still living but elderly “stepfather”, Kachua. (Agyon does not remember his biological parents and came to live in Jhau Nallah as a child.) This group apparently consists of five to eight “villagers”, with only one woman, Kachua’s wife, who may be over eighty years old and who usually stays inside her hut. Agyon has a leadership qualification uncommon among Shompen: he can speak some Hindi. He is also familiar with currency and he once received medical treatment in Campbell Bay for several months. Agyon left and returned to his people voluntarily. He has two hodis and is a skilled member of his community, but what are his actual prospects? There are no mates for him in his village. Shompen women in neighboring Laful and Trinket are jealously guarded. An important problem facing the Shompen today is the sex ratio. Agyon usually spends his days doing small jobs around the village and waiting for the government rations to come, or he actually goes to town to fetch them. He is as dependent on these rations as the others in his village. Is there a connection between the frequent illnesses in Agyon’s village and dietary change—or change in the Shompen lifestyle generally? Isolated populations succumb easily to diseases harboured by the societies they come in contact with, but there are also diseases that follow changes in lifestyle. Whatever the connection between Shompen health and changing diet, Agyon and his people will be waiting for rations... Is it right to pretend that we are not changing the Shompen and to believe that we are letting them develop “according to their own genius”?

increasing, those of Primitive Tribal Groups are stagnant or declining (PTG's currently make up less than half of one percent of the national population.) Taken as a segment of the national population, tribal people are less literate, less well nourished, more diseased, more vulnerable to displacement, and they have smaller incomes and/or less property than the non-tribal population.

MTA views illiteracy and lack of formal education as key signs of backwardness. The 2004 draft national policy states that formal education is "the key to all-round human development" and implies that extension of formal education to tribal people is complementary to preserving and promoting their cultural heritage. MTA acknowledges "that Scheduled Tribes in general are repositories of indigenous knowledge and wisdom in certain aspects." The word repository is significant: it connotes a resource or treasure from which not only tribal peoples but also the nation and the world can benefit. MTA identifies not only poverty and lack of infrastructure as explanations for tribal peoples' low literacy but also their lack of attachment to ideals of formal education. The latter is supposed to be due to the tribals' "alienation from society" and the "irrelevance", to them, of dominant educational models. It is therefore important that teaching be conducted in the tribals' mother tongue "at least up to the primary level". While "meta skill upgradation" may be crucial, curricula are to incorporate aspects of traditional culture. This educational ideal is coupled in the draft national policy with preserving "traditional wisdom", which includes ethno-medicine/botany, meteorological knowledge, water harvesting, and natural resource use and cultivation. The draft national policy notes the need to "transfer such knowledge to non-tribal areas." The implication, once again, is that indigenous

wisdom is a national resource, not to be ignored or depleted, and that *it can be extracted and understood in isolation from its socio-cultural context*. The draft remarks on the roles played by traditional medicine in the adaptability and survival of PTG's but also notes that tribal peoples suffer inordinately from preventable diseases. In language reminiscent of Nehru-era planning documents, the draft exhorts the country to "eradicate endemic diseases on a war footing."

The MTA draft discusses forest villages as sites of tribal development and cultural preservation. Tribal peoples over the years have been forced out of their home territories or have otherwise been alienated from the land. Protection of forest environments and recognition of tribal groups' customary rights with respect to forests is crucial, as is their participation in forest management. The state is to play a role via Tribal Development Cooperative Corporations in regulating the collection and sale of forest produce. Provision to tribal villagers of amenities like safe drinking water and educational and health care facilities "on par with revenue villages" (i.e., villages in which taxes are collected and public money spent) should be given high priority. Public distribution of food and establishment of grain banks are appropriate means of addressing the "food problems" faced by many forest villagers. While emphasizing tribal peoples' "wise" use of resources like land, the draft national policy also makes critical claims about their agricultural practices. "Shifting cultivation", whose technologies include the digging stick and the sickle, is "hazardous to the environment" and supports tribal cultivators for only about four months of the year. Shifting agriculture, the draft asserts, has not engendered among tribals any "emotional attachment to the land as an asset or property needing care and attention" and

"Tribals merely believe in harvesting crops without putting in efforts or investments." The draft highlights the need to imbue tribal people with a sense of ownership of the land and to "sensitise tribals about alternative economic strategies so that they can come out of shifting cultivation." It adds that legal and institutional arrangements are needed to "protect their (i.e., tribals') intellectual property rights" so as to prevent the value of their labour and ingenuity from being appropriated by "corporate and other agencies". The MTA clearly perceives tribal peoples' culturally rooted "lack of attachment" to private property as both sign and cause of their backwardness.

The MTA asserts the need to strengthen the powers of Tribal Advisory Councils and to install tribal affairs administrators who have "adequate knowledge, experience and a sense of appreciation for tribal problems."¹⁹ Study of tribal administration and research on all aspects of tribal societies and cultures are to be promoted through existing Tribal Research Institutes and establishment of "a national-level research institution". Above all, a "participatory approach" to tribal development should be adopted, involving, where possible, non-governmental organisations and voluntary agencies that "act as catalysts in reaching benefits of Government programmes and policies to the grass-root level." No mention is made of encouraging tribal peoples' participation in the process of "research" or in conceptualising the goals to be achieved. The draft asserts the need to "preserve and promote... traditional knowledge and wisdom," to "disseminate" it and "transfer" it to non-tribal areas; to "validate identified tribal remedies" and to "encourage, document and patent tribals' traditional medicines". Nowhere does the draft propose incorporating indigenous ways of knowing into social development or environmental con-

servation measures. It concludes by reiterating the importance of preserving the cultural distinctiveness of tribal groups while noting that the tribals suffer from cultural isolation. It states that tribals' "geographical isolation shall be minimised through development of roads, transport and means of communication... " Assimilation in many senses is taken as a prerequisite of tribal development.

The 2004 draft national policy on tribals shows the impress of proposals circulating among development economists, environmentalists, human rights activists and advocates of indigenous peoples. Even as a statement of general principles or ideals, however, it is difficult to see how the draft policy can be beneficially applied to the Great Nicobar scenario. For instance, how is preservation of tribals' cultural distinctiveness to be reconciled with encouraging means of communication and travel between tribal areas and the outside world? In the case of the Jarawas in the Andamans, for whom exposure to modernity has been nothing short of catastrophic, the Shekhar Singh Commission appointed by the Indian Supreme Court recommended that all logging cease on Little Andaman Island and other islands containing tribal reserves and that the Andaman Trunk Road be closed to traffic on South and Middle Andaman. The Sekhar Singh Report was accepted by the Supreme Court on May 7, 2002.²⁰ The Court took into consideration the fact that the forests of the Andamans were being rapidly depleted and that the trunk road was facilitating outsiders' exploitation of the Jarawas.

Like other isolated tribal populations, the Shompen have been susceptible to pathogens for which they lack natural immunity, and as recently as the 1990s numbers of them have fallen victim to epidemic diseases. Many indigenous peo-

ple in ANI (not only the Shompen) are addicted to tobacco and alcohol. There is no conclusive evidence that government distribution of rice, milk powder and soap to the Shompen is improving their health and it is clearly undermining traditional food cultivation practices. We should also consider whether the MTA's assertions about the destructiveness of shifting cultivation are merited in the case of the Shompen, and whether the hunter-gathering mode of existence is *generally* destructive to the environment and wasteful. (The draft policy statements concerning environmental degradation appear to have in view Manipur, Nagaland



Figure 5. Ihak and Shompen boys, Laful village. (Courtesy Suresh Babu)

and other north eastern states—regions where general decadal rates of population growth 1991-2001 have ranged from twenty to more than sixty percent.) Has Shompen resource use actually failed to foster their “emotional attachment to the land” and instead encouraged environmental degradation? Given the failures of settler agriculture and other modern economic activity on Great Nicobar, it appears rather that non-tribal people have something to learn from Shompen resource management.

Towards an ecosystem assessment of Great Nicobar

State “protection” of the Shompen cannot forestall some kind of engagement with modernity. The question is about how, on what and whose terms, this engagement is to be managed. The Nehruvian *Panchasheel* of tribal policy stated that tribal development should be measured not in terms of money spent but in terms of the demonstrated well-being of tribal peoples. In pursuit of a Management Action Plan for the GNR, the Ministry of Environment and Forests in 2001-2002 earmarked Rs. 18,500,000 (\$ 410,000) for “protection, habitat improvement, socio-economic activities, and eco-development activities and awareness generation.”²¹ Ten times this amount would not necessarily be money well spent if it is not properly targeted. Development planning must rest on comprehensive ecological analysis, and the latter must take into account issues of human participation and social “location” in ecosystems and the differential stakes of people in “ecosystem services”.

The Shompen are dependent on forest, rivers and sea for food, water, shelter, fiber, cooking fuel and other bio-produce. The Nicobarese depend more heavily than the Shompen on the sea. The ecosystem services on which recent settlers depend

are limited to fresh water supply. While the well being of the entire population of Great Nicobar is dependent upon the health of the environment, settlers exercise more direct or indirect influence than do the tribal populations on policy-making and administration. Settlers receive state aid not only in the form of utilities and education and health facilities, but in form of price supports, transport subsidies and rebates. Their dietary resource base is narrow and external; little of what they consume is produced locally, so the level of state subsidies (*e.g.*, for food transport) directly correlates to their standard of living. The Nicobarese, and to some extent the Shompen, are becoming increasingly dependent on state aid in the form of food distribution. As subsistence-level producers, with whom outsiders are in fact prohibited from trading, the Shompen do not benefit from price supports.

How will tribal people fit into economic development scenarios for Great Nicobar? Will their economic participation or non-participation be a matter of their individual and collective decisions, or will others decide for them? Few Indian officials and policy-makers have advocated economic development of Primitive Tribal Groups through direct exposure to national and world markets. Even proposals for controlled engagement of tribal peoples with

How will tribal people fit into economic development scenarios for Great Nicobar? Will their economic participation or non-participation be a matter of their individual and collective decisions, or will others decide for them?

wider markets (*e.g.*, through tribal development corporations and cooperative societies) should in fact be considered with great caution. "Jobs", even if designed around familiar skills and existing resource uses, cannot even approximately

replace the traditional livelihoods of indigenous people.

Jobs are means of economic specialisation and this kind of assimilation of tribal people is likely to erode traditional values and institutions in a manner detrimental to both cultural identity and environmental conservation. As Michel Pimbert observes, "The integration of rural communities and local institutions into larger, more complex, urban-centered and global systems often stifles whatever capacity for decision-making the local community might have had and renders its traditional institutions obsolete."²² New social hierarchies result from new economic patterns, and rapid social and political changes often lead to adverse environmental impacts.

If global pricing and external criteria of valuation overwhelm local use values, then indigenous peoples will have incentive to exploit species that are in demand on the world market...

Agribusiness and pharmaceutical enterprises have promoted bio-prospecting as a means of "protecting" indigenous peoples and the environments they inhabit. Authorities who mediate between commercial interests and vulnerable environments and populations sometimes adopt the arguments of the bio-prospectors by emphasizing the invaluable potential benefits of biodiversity preservation.²³ As the saying goes, the rain forest may hold the cure for cancer. Yet it is precisely such "objective", external assessments that help rationalise exploitation of indigenous people. Economic valuation is posited as a precondition of tribal assimilation into national societies and the wider world. The logic of this attitude seems to be that indigenous people can protect themselves better if they are aware of the "true" (*i.e.*, economic) value of the environment and the skills with which they manage local resources. But if global pricing and exter-

nal criteria of valuation overwhelm *local* use values, then indigenous peoples will have incentive to exploit species that are in demand, for brief or longer spans of time, on the world market.

Overexploitation of market-preferred species might consequently trigger losses of species interacting with them, while other local flora and fauna—those not valued by the global market—might multiply to levels that cause environmental asymmetries and disrupt ecosystem processes. Changes in ethnobiological preferences have environmental impacts that are difficult to predict or counteract. For this reason it is crucial to appreciate local knowledge systems and resource uses, not only for their economic value to us or even to local people themselves but for their inestimable conservation value.

Conservation authorities in India and elsewhere are often asserting the principles of decentralised decision-making out of respect for indigenous peoples' rights and "native wisdom". Yet in pronouncements such as the Ministry of Tribal Affairs draft policy discussed here it is difficult to ignore tones of calculated public relations rhetoric and condescension. Celebratory references to native wisdom are unconvincing if policy makers and conservation officials fail to make serious efforts to solicit indigenous peoples' opinions. An important reason for taking local knowledge seriously is that external observers cannot understand ecosystem processes and biodiversity dynamics without understanding the roles played by indigenous people in maintaining their "natural" environments. Indigenous knowledge needs to be incorporated into conservation strategies. Environmental assessments should always involve social assessments.²⁴ Conservation strategies for Great Nicobar should involve the direct participation of those whose resource uses have shaped the island for possibly

thousands of years. The Shompen and other tribal societies were "developing" long before modern societies had any real impact on them. "Sustainable development" of the population of Great Nicobar may not be an oxymoron if development is more closely defined by the value systems and cultural practices of the Shompen.

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- 10 His dubious assumptions about ethnology and "racial" classification aside, C. Boden Kloss provides useful descriptions of Great Nicobar and its inhabitants. Some of his observations, made in 1901, about social practices and settlement patterns of the Shompen illuminate the present-day situation (Boden Kloss, 1994).
- 11 There is broad agreement that dogs were introduced to the ANI by the British in the 1850s, though the precise time of their arrival on Great Nicobar can only be conjectured. Sekhsaria, 2003.
- 12 Balakrishnan, 2002.
- 13 Balakrishnan, 2002.
- 14 Details reported in Babu *et al.*, 2003: initial report of results of ongoing ecological surveys.
- 15 The Gross Domestic Product of ANI increased ten-fold between 1980 and 1996/97. Commercial forestry, however, has been cut back drastically since the late 1990s, and agricultural productivity is apparently declining. The islands are more than ever dependent on food imports. Transport of goods and people to ANI is subsidised by the government.
- 16 Andrews and Sankaran, 2002.
- 17 Promoters of "global level tourism" in ANI complain about the large amount of protected interior and coastline area because "the places that can be developed are at a premium." (Nambath, 2004).
- 18 See note 4 above.
- 19 Tribal affairs officers answer to the MTA and to the state governor (in the case of ANI, the Lieutenant Governor appointed by the central government). Tribal Advisory Councils are constituted by elected local government members and they advise the state governors and local representatives of the ministries (e.g., Tribal Affairs, Environment and Forests).
- 20 Both the report and the Supreme Court order are printed in Sekhsaria, 2003 (pp. 73-86).
- 21 Reported in Andrews and Sankaran, 2002.
- 22 Pimbert, 2003.
- 23 For discussion of potential benefits and abuses of bio-prospecting, see Johnson and Jonsson, 1995.
- 24 See report of the Conference of the Parties to Conventions on Biological Diversity at its fifth meeting, Nairobi, Kenya, May 15-26, 2000. Principle 1 of the recommended Ecosystem Approach to biodiversity protection: "The objectives of management of land, water and living resources are a matter of societal choice."

Notes

- 1 Balakrishnan, 2002.
- 2 Figures cited in Andrews and Sankaran, 2002.
- 3 Linked to human settlement is the phenomenon of invasive species: see Figure 5 and discussion in text below.
- 4 "Primitive Tribal Groups are Scheduled Tribes known for their declining or stagnant population, low levels of literacy, pre-agricultural technology, primarily belonging to the hunting and gathering stage, and extreme backwardness." (Ministry of Tribal Affairs, 2004).
- 5 Lewis, 2003; Sivaramakrishnan, 2003; and literature reviewed therein.
- 6 The sanctuary had been the pet project of Salim Ali of the Bombay Natural History Society and enjoyed the support of Jawaharlal Nehru and Indira Gandhi. See Gadgil, 2001; Lewis, 2003.
- 7 See Pimbert, 2003, for a thoughtful discussion of "participation" in community-based conservation.
- 8 Balakrishnan, 2002.
- 9 Andrews and Sankaran, 2002.

A Layered Homeland: History, Culture and Visions of Development

Susan DeLisle

Summary. Authority over resource management and development has historically been viewed as a state responsibility. However, many indigenous peoples and local communities have practiced community based management systems “legitimised” as part of their own culture and history. Development theory recognises the importance of such systems but state initiatives have tended to privilege their own objectives in place of community interests and practices. In Ardoch (Ontario Canada), different culture groups have collided and evolved over several generations, each developing a sense of attachment to place based on their own cultures and interpretations of history which are at once contradictory and shared making it a *layered homeland*. Yet, while cultural difference sometimes results in a conflicting narrative at the local level, when faced with an external threat, solidarity between these different culture groups can also emerge. At the hamlet of Ardoch, a 1979 state initiative to manage and develop wild rice collided with a long standing community based management system with roots in its indigenous cultural heritage. While this conflict was overtly about access and control of wild rice, it was also about different attitudes toward the role of communities in resource management decisions and the implications this has for resource use and conservation, community and economic development, and cultural identity and survival. In the end, local community management was able to continue under official provincial authority. However, no benefit that could have resulted from cooperation was achieved. This conflict demonstrates that when states make management decisions without consultation with communities they risk damaging environmental, economic, and cultural linkages. They also risk loss of access to traditional knowledge, damaging human and cultural capital, and generating considerable hostility, which undermines potential opportunities achieved through more cooperative approaches.

Historically in western conceptual thought, and in legislation arising from this perspective, authority and control of resource management and development have been viewed as a state responsibility. However, all over the world, indigenous peoples and local communities have practiced long standing community based management systems based in culture and history that implicitly assume locally based authority and control. There is an inherent potential for conflict between these two systems, but also a potential for cooperation and mutual strengthening.

Current resource development theory has recognised the importance of community based management systems and that com-

munities are often more conscious of socio-environmental interconnections than are the state agencies that assume responsibility for regional and resource development initiatives.¹ If state approaches seek to draw on local knowledge and expertise, and to formulate development plans in cooperation with local partners, benefits can be maximised. Historically, however, state initiatives have failed to involve local communities, and have tended to privilege their own objectives in place of community inter-

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ests and practices.

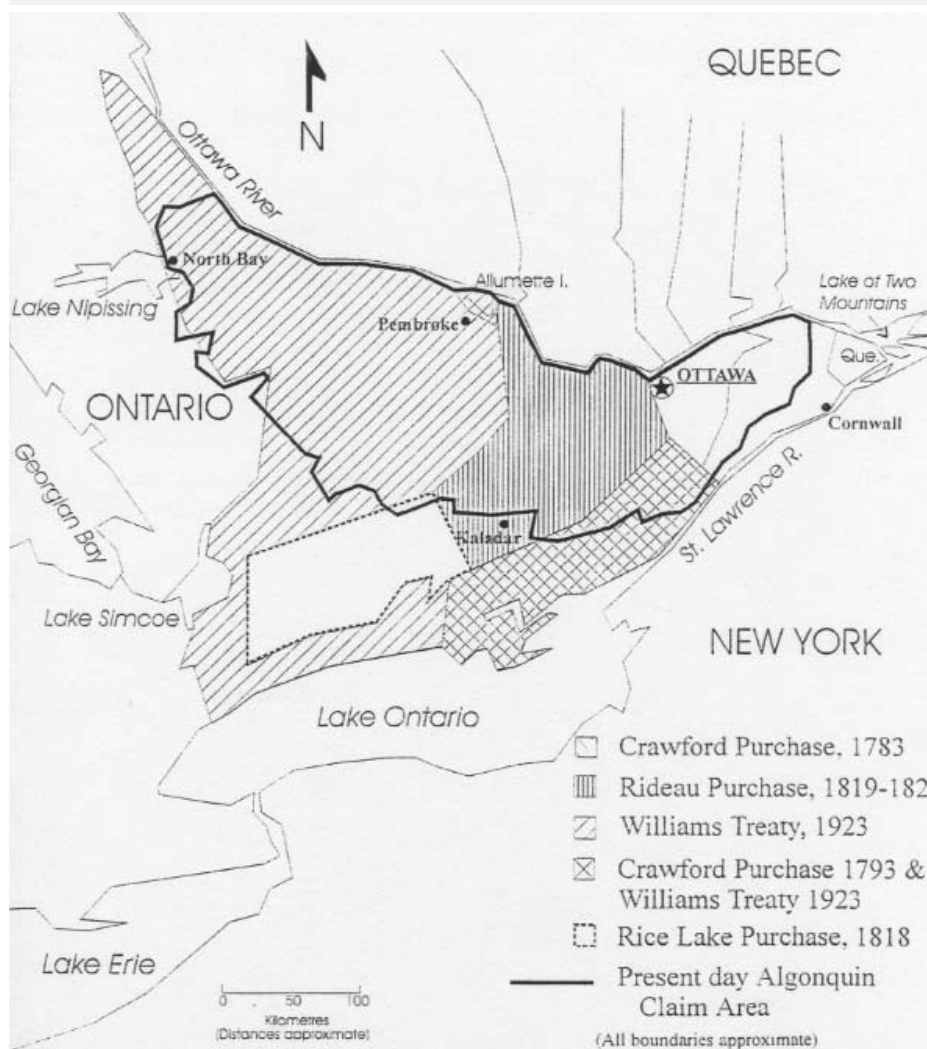
In 1979, at the hamlet of Ardoch (Ontario, Canada), a state initiative to manage and develop a particular resource (wild rice/*Manomin*) collided with a long standing community based management system with roots in the cultural heritage of the area. It began when the Ontario Ministry of Natural Resources (OMNR) issued a wild rice harvesting license to a private harvester without consulting with local peo-

ples. This simple event drew together local residents into an alliance of culture groups in opposition to this state initiative, set in motion a conflict that would not find resolution for four years, and would completely fail to meet the state objectives of resource and economic development it had sought to achieve.

This conflict touched on a number of themes: divergent concepts around what constituted development; different values associated with the conservation and management of wild rice; conflicting perspectives on the effects of wild rice development on the local economy; and diverging ideas about community and indigenous rights to local resources.

The residents of Ardoch were (and are) a community of different culture groups living as neighbours. In communities like Ardoch, where different culture groups have collided² and then evolved over several generations, each group can develop a sense of attachment to place based on their own culture and their own interpretations of history that are at once contradictory and shared making it a homeland layered with meaning – a *layered homeland*.³ Thus, at a local level differences in cultural heritage sometimes play themselves out in a conflicting narrative. Yet, when faced with an external threat, the mutual history of struggle for survival can provide a basis for solidarity between

Map 1. Mississauga Land Cessions and the Contemporary Algonquin Claim Area (Courtesy Huitema, 2000)



Source: Huitema, M., 2000, "Land of which the savages stood in no particular need": Dispossessing the Algonquins of South-Eastern Ontario of their Lands, 1760-1930, Queen's University M.A. (Geography)

these different culture groups.

'Indigenous rights' and who qualifies

In Canadian law *indigenous rights* are based on British Common Law which states that "the Aboriginal Peoples of Canada should retain, under English law, those property rights they possessed prior to colonisation that have not been expressly extinguished by specific legislation and/or for which compensation has not been paid".⁴ This position was directly applied in North America through the *Royal Proclamation* (1763) which reiterated this position and provided that the purchase of indigenous lands was to be undertaken by state agents exclusive. Once the federal government had treated for enough lands to consolidate its interests, the Canadian state was established through the *British North America Act (BNA) 1867*. Through this act the federal government took responsibility for Indians and lands reserved for Indians while provincial governments were given responsibilities for natural resources. Further clarification through the *1889 St. Catherine's Milling* court decision granted ownership of all ceded lands to the provincial governments. This made any interest in resources outside of reserve lands extremely difficult to pursue.

Status Indians are those who are recognised as 'Indians' under the Canadian Constitution. While the history of inclusion is somewhat complicated, status was primarily achieved through the treaty making process. Once a treaty had been signed, the state took the position that any prior right of ownership had been forfeited in exchange for small areas of land reserved for indigenous use (reserve lands), and certain rights defined within the Treaty and various Indian Acts. By the end of the 1800s, Indian status, *not indigenous heritage*, came to be seen as the means

through which a person was deemed eligible for special consideration.

Non-status indigenous peoples are either individuals who have lost status through a number of revisions to the 'Indian Act', or they are descendents of those who were never formally recognised through the treaty making process. Non-status indigenous persons were excluded from any special right held by Status Indians. Rather, they were considered to be 'local' peoples along with other non-indigenous residents despite their considerable differences in perspectives and expectations. In effect, non-status Indians became *white by definition*⁵ and their ownership of any 'special right' which may have flowed from their indigenous heritage and original occupation of the land was considered to have been extinguished.

The post-WWII years dramatically altered the social climate in Canada leading to a critical reinterpretation of social policy, providing a climate for the reconceptualisation of indigenous policy. In this time frame, the Calder case (1973), comprehensive claims policy (1973), and the repatriation of the Constitution (1984) changed the legal position of indigenous peoples and reopened the debate surrounding indigenous rights in Canada.⁶ However, at the time of the Mud Lake conflict (1979-1982) non-status indigenous peoples were denied recognition of any special right, while status Indians had little recognition of rights to lands outside of reserve lands.

Settlement of the lower Ottawa valley & development of the Ardoch community

The historical record shows evidence that Algonquin peoples inhabited both sides of the Ottawa valley in the 1600s. By the 1700s they were frequenting the Lake of Two Mountains in Quebec to undertake business with the then colonial administra-

tion during the summer and would return to their hunting grounds in various parts of the Ottawa watershed in late summer.⁷ During this timeframe, Mississauga peoples expanded south from their homelands northeast of Lake Huron and were living in the region north of Kingston Ontario (south of the Ardoch region) at the time of the loyalist settlement in the late 1700s.⁸ The exact nature of the boundaries between the Mississauga and Algonquin nations during this time are not known, however relationships surely existed between members of these groups and it is likely that the boundaries were fairly porous.⁹ The historical record consistently defines the Algonquin territory as lands whose waters flow into the Ottawa River on both sides of the river, and there is ongoing evidence demonstrating that Algonquin peoples continued to reside in the region. However, despite ongoing

a female ancestor of the Algonquin community planted wild rice at Mud Lake some time around the 1900s... stewardship was handed down within the family... and became part of the community heritage of living on and with the land.

claims by Algonquin peoples, the Crown chose to engage in a treaty process with the Mississauga to lands on the north shore of the Ottawa River and to exclude claims by Algonquin peoples (Figure 1).¹⁰

Settlement activity began in the region surrounding Ardoch Ontario in the 1840s.¹¹ The

crown, having considered indigenous interests extinguished, granted European settlers title to lands in the region free of charge under the condition that certain settlement requirements were met (e.g. land clearance and the construction of dwellings). Algonquin peoples found themselves faced with an influx of non-indigenous settlers, backed by the crown, taking possession of lands regardless of Algonquin occupation.¹² The progressive evolution of this process marginalised Algonquin Peoples and effec-

tively dispossessed them from their lands.

Many Algonquin peoples fled the territory. However, evidence shows that scattered groups remained in the region. At the start of the 1900s Algonquin peoples (specifically the Whiteduck family) lived in and around the area now known as Ardoch. Both settler and indigenous peoples made use of hunting and trapping, leading to competition for increasingly scarce resources. Because settlers were recognised as legitimate inhabitants of the area, indigenous inhabitants were pushed to the margins for survival, and forced into adaptive strategies.¹³

Local oral history acknowledges the planting of the wild rice at Mud Lake some time around the 1900s by a female ancestor of



Figure 1. Wild Rice growing at Mud Lake, Ontario. (Courtesy Susan DeLisle)

the current non-status Algonquin community. Stewardship of the wild rice was handed down through the Whiteduck family to the current steward, Harold Perry. By 1979, the wild rice growing in Mud Lake at Ardoch was part of the community heritage of living on and with the land. It was harvested annually by Algonquin residents from the area along with their Alderville Mississauga relatives, and by some of their non-indigenous neighbours. Out of the areas indigenous cultural heritage, the local inhabitants' relationship with the wild rice had evolved

into a community based management system, and a community resource.¹⁴

Indigenous Peoples relationship with wild rice/*Manomin*

Wild rice is known to indigenous peoples as *Manomin* – the “gift of the Creator”. Being easily stored, *Manomin* was known historically as an invaluable commodity for trade, and a critical food in times of scarcity.¹⁵ Contemporary *Manomin* use has a role in maintaining a link to the history and culture of its indigenous users. Harvesting is a ritualised activity learned, taught, and practiced in

culturally specified ways.¹⁶ Children harvest in lakes seeded by their grandparents and

It is an implicit understanding that a portion of the seed will be allowed to fall into the water, or be sowed on the water, for fish and other animal users, as well as for the regeneration of the plant for the future.

great grandparents; they learn how to harvest and process *Manomin* from their elders; and they continue to share in the communal practice of protecting, nurturing and harvesting the plant. As Thurston states, “for traditional harvesters, ricing is a

kind of spiritual holiday, a time for families and friends to come together.¹⁷

In Aboriginal communities, *Manomin* is subject to a system of Aboriginal management. This process includes a ‘steward’ who monitors the crop and decides when it is ready to harvest. The steward also decides who should be invited to participate in the harvest so that all community needs are met. The quality of rice beds are considered and, if poor, are left to rest in order to replenish. It is an implicit understanding that a portion of the seed will be allowed to fall into the water, or be sowed on the water, for fish



Figure 2. Wild Rice plants in August - these plants need a few more weeks to ripen. (Courtesy Susan DeLisle)

and other animal users, as well as for the regeneration of the plant for the future.¹⁸ In this way, there is an implicit recognition of themselves - the indigenous users - as members of an ecological community. It also implies respect for *Manomin* and its contribution to the well being of the whole ecological environment.

The 1970s saw a movement to open up tracts set aside for indigenous people to non-indigenous commercial operations. At Ardoch Ontario, this movement precipitated a four year struggle by the local community to protect what was seen as a local resource. This conflict took place between two major groups: a community action group vs. the Ontario Ministry of Natural Resources (OMNR) and Lanark Wild Rice (LWR). The community action group was formed through an alliance of a number of different parties: the non-status Algonquin residents of Ardoch headed by the Perry family, their status Mississauga relatives from a nearby Mississauga reserve, non-indigenous permanent and seasonal residents, and a number of regional representatives (i.e. the local conservation authority, two regional municipal councils, the local

hunter and angler association, and the federal and provincial member of parliament).

The 1979-82 Mud Lake wild rice confrontation

In 1979, a license to harvest wild rice at Mud Lake in Ardoch Ontario was granted to LWR by the Ontario Ministry of Natural Resources (OMNR). This brought provincial policy objectives to develop a viable wild rice industry squarely into conflict with a long-standing local traditional authority and management system. Evidence suggests that the community had no knowledge of the Wild Rice Harvesting Act (WRHA) 1960 which required users to make application to the OMNR for a harvesting permit. Rather, a long-term local authority structure was in place. The Perry family had always functioned as the recognised stewards of the wild rice. This local authority structure governed wild rice use and management and had done so for several generations. In addition, primary evidence suggests that local area OMNR staff were unaware of, or considered extraneous, the long time community practice that was in place.¹⁹ Thus, a local system of authority and management existed in parallel to provincial structures, with both parties presumably unaware of the other. The Mud Lake conflict represents a collision of these two systems.

The conflict came to light when a local (non-indigenous) resident discovered a commercial harvester harvesting wild rice on Mud Lake and tried to make a citizens arrest. The operator produced the OMNR issued harvesting license granting him harvesting privileges. Community members contacted the local OMNR office in protest and a large number of residents attended a meeting called to address the issue. Following local objections, the local OMNR office decided not to issue a harvesting license for the following year.

In response to this decision, LWR requested

a hearing under the WRHA 1960 which was held in July of 1980. The hearing was attended by large numbers of community members. Presentations were given by community members detailing the planting of the wild rice by a community ancestor, reseeding initiatives by the Perry family to maintain the crop over time, their concerns regarding the amount taken by commercial harvesters, the potential effect on the long term conservation of the wild rice bed, and potential related effects on the local economy. They also expressed their belief that commercial harvesting was contradictory to the principles of wild rice harvesting. They spoke to the needs of the fish, the birds, and the regeneration of the crop. Finally they argued that the wild rice belonged to the Perry family and should be left to the local community.

LWR detailed their experience with wild rice harvesting indicating that, in their experience, commercial harvesting did not represent a threat to the long term viability of wild rice beds. LWR also proposed sharing the wild rice harvest on a percentage basis with the local community, and proposed building a processing plant in the area producing local area jobs.

After consideration of the hearing report the Deputy Minister of the OMNR decided not to issue a license to LWR for the 1980 harvesting season. This prevented a commercial harvest in the 1980 season. Mr. Perry harvested a small amount of rice in order to reseed areas which he felt had been damaged by the previous year's commercial harvest.

Due to the community's non-violent protest LWR was unable to gain access to the lake before the end of the harvesting season. As a result, the community succeeded in preventing another season of commercial harvesting.

In response to the 1980 decision LWR met with the Minister of Natural Resources in November of that year and the previous

decision was overturned. The local office was ordered to issue a harvesting license to LWR for the following harvest season. The local community was not notified of this decision. When Mr. Perry went to apply for his personal use harvesting permit in September 1981 he was notified that the lake had been segmented and that he would have access to a portion of the wild rice crop only.

Mr. Perry submitted a letter of protest indicating that he would use any means – political, public and legal- in order to protect the wild rice from exploitation. The community took an adamant stand against commercial harvesting and prepared to block the commercial harvester from reaching the lake. They engaged in a media blitz through which they provided documentation of their position.

On Aug 30th 1981 community members set up road blocks and took up positions to block access to Mud Lake. LWR was given support by the OMNR and by the regional Ontario Provincial Police (OPP), who indicated that because LWR had a valid license to harvest; it was their duty to uphold that right and to protect LWR from harassment. Due to the community's non-violent protest LWR was unable to gain access to the lake before the end of the harvesting season. As a result, the community succeeded in preventing another season of commercial harvesting.

A second hearing was held under the WRHA 1960 on November 30th and December 1st, 1981. At this time, the terminology of the dispute shifted heavily towards a dialogue of scientific management, economic development, and Ministry control. Community legitimacy came under heavy attack, and the traditional knowledge held by Mr. Perry was described as lacking a scientific methodology, and as being intuitive, naïve and unsophisticated. The OMNR declared that all resources belonged to the province through the Constitution Act 1867, and stated its leg-

islated mandate to manage wild rice through the WRHA1960. They argued that they were the only agency having the necessary expertise to make appropriate management decisions. Finally, they maintained an absolute position that commercial harvesting must take place; that the sale of wild rice was a priority; and that this would benefit the community through money spent maintaining the industry, as well as the development of local jobs.

LWR engaged in a detailed discussion of scientific methods, results found in paddy wild rice experimentation, and pointed to Ojibwa communities that were engaged in commercial harvesting elsewhere. In response to community arguments regarding the potential conservation risks associated with commercial harvesting, LRW argued that the wild rice bed was too thick and was choking itself out. They argued that more effective harvesting would improve the quality of the wild rice bed. Finally they reiterated a commitment to share the harvest with the local community, again on a percentage basis, and proposed building a processing plant that would produce local economic development.

In response, community members once again put forth their position. They vehemently opposed commercial harvesting of any kind, including opposition to the sale of wild rice which went against their cultural relationship with it. They argued that that their traditional knowledge, hard won through years of relationship, demonstrated a commitment to conservation expressed through their reseeding efforts in response to years when the wild rice was threatened or weakened. They further argued that their long term relationship with the wild rice established them as the only party who could justifiably claim a right to benefit from the harvest. In contrast, they argued that the OMNR had no legitimacy to manage the wild rice because they had no history, and no relationship with it, and criticised the OMNR for failing to assess the effect of the 1979 harvest, thereby challenging their commitment to conservation of the resource.



Figure 3. Dancers at the celebratory Pow Wow following the unveiling of a plaque commemorating community opposition to commercial harvesting of the Mud Lake wild rice at the 25 year 'Manomin Victory Celebration' - August 21, 2004. (Courtesy Susan DeLisle)

Furthermore, in response to statements regarding economic development, they discussed their local economy based on the abundance of wildlife in the region and stated their concerns regarding the potential damage to their local economy should commercial harvesting prove detrimental. They argued that financial benefit is not restricted to the sale of resources, but is part of the benefit that comes from the interrelationship between the local economy and the conservation of resources. They also expressed concern that financial profit was the primary motivation of any commercial enterprise, suggesting that LWR had little incentive to place a priority on conservation, and that the local community stood to lose culturally and economically if the wild rice bed was destroyed.

However, in an effort to address the concerns expressed by the OMNR regarding effective use and management of the resource, the community proposed a community organisation under the title IMSet (the Indian, Métis and Settler Wild Rice Association) to keep harvesting records and

to study development potential. In April 1982, a further significant concession was made involving limited commercial harvesting for seed only, on 30% of the lake, if the commercial license was granted to IMSet only, and the remainder of the lake was reserved for local access and control. It was argued that LWR should seed lakes for its own use rather than taking advantage of the hard work of others.

In July 1982 the OMNR informed the local community that their organisation, IMSet would be considered for a commercial license to harvest on 30% of the lake allocated for commercial harvesting.

They further noted that the remainder of the lake would be reserved for community use but that harvesters would be required to sign a book and pay a \$1. fee to harvest. However, the decision maintained the absolute authority over the wild rice by OMNR and did not allow for harvest quotas and decisions to be made by the local community. The OMNR failed to recognise the community's right to manage the wild rice through their generations-long relationship and traditional management practice – a position which failed to acknowledge community conservation concerns.

In the community's response they rejected the OMNR's decision and informed the OMNR that they would continue to exercise their indigenous right to control and use the wild rice at Mud Lake. They detailed the community's efforts to accommodate the concerns of the OMNR, as well as the failure of the OMNR to do the same in exchange. They challenged the OMNR indicating that they (the OMNR) "do not have a legitimate right to the wild rice at Mud Lake and can-

not arbitrarily declare that it has a responsibility and right to determine its use". They indicated that they would "passively resist any force which attempts to diminish our members rights to peacefully harvest wild rice on any part of Mud Lake"... and that they were "dedicated to a strengthened union between native and rural people to ensure that their rights to this particular resource and the accompanying cultural values and traditions are not surrendered".²⁰

In August 1982 another meeting was called where a final resolution was reached, preempting yet another harvesting season conflict. This agreement stipulated that the community would apply for a harvesting license (thereby preserving the authority structure of the OMNR), and in exchange, the OMNR would withdraw from management decisions on Mud Lake (thereby maintaining the community's functional authority). Both agreed that the issue of jurisdiction was disputed and would be left for another time.

a final resolution preserved the authority structure of the OMNR while maintaining the community's functional authority... the parties agreed that the issue of jurisdiction was disputed and would be left for another time

While the community action alliance did present a common challenge to the OMNR's objectives during this struggle, they did not do so without cultural differences in position. The different values expressed in the following statements show the significant differences in cultural perspective, representing a significant potential to incur conflict among different segments of local society from time to time. However, faced with an external threat, the mutual history of struggle for survival provided a basis for solidarity between these different culture groups in order to protect the long standing management and use of a locally significant resource.



Figure 4. Allen Roy, Bob Lovelace and Harold Perry - three of the original defenders of the Mud Lake Wild Rice. (Courtesy Susan DeLisle)

Indigenous community perspectives

- Mr. Perry and the Algonquin non-status community were primarily focused on their family and cultural relationship with the wild rice. They felt that the rice was a part of their identities and their very beings. They felt that the rice belonged to them, and that they had a responsibility to continue to protect it. They also expressly declared that they were the only ones with the knowledge to properly manage the wild rice based on their long experience, and noted that it was their duty, out of respect for their ancestors, and on behalf of their children to continue to do so. They also had concerns that the values of use and sharing providing for the long term survival of the crop and respect for other users – birds/fish/others – would continue. They utterly opposed management by the OMNR.
- Status Mississauga positions focused on their long term history of harvesting at Mud Lake, a confirmation of the Perry family as the recognised stewards, and the significant cultural importance and protocol in the process of harvesting. They expressed the importance for continuing the traditional practice in the tra-

ditional manner in order to pass on their heritage to their children, and argued that harvesting was a matter of indigenous right, and that wild rice belonged to its indigenous users. A further point of significance was that wild rice was never harvested for sale, and that both harvesting and sharing of wild rice was to be undertaken in culturally specified ways.

Non-indigenous community perspectives

- The *non-indigenous Ardoch Residents* were primarily concerned with the lack of consultation with and respect for local people. They also felt deeply that the wild rice was tied up with the economic well-being of the region, and thus played a role in the lives of everyone in the region, whether they harvested rice or not. They felt that the benefits of the wild rice belonged to the local people and should not be risked. They did however approve of seeding other lakes for other users, including LWR.
- As with other local residents, the *Association of Hunters & Anglers* expressed concern regarding the potential effects on harvestable species if the rice crop was threatened. They had no specific opposition to OMNR control so long as local access was protected, and expressed that community and waterfowl interests should take priority, followed by commercial needs. They were not averse to commercial harvesting but felt that new beds should be seeded for the purpose.
- The *Mississippi Conservation Authority* noted their involvement in conservation and reseeded initiatives of the wild rice over time. They felt strongly that the wild rice on Mud Lake should be left for traditional and domestic users, and that no commercial harvesting should be permitted on this site.

Perspectives of the government representatives

- *Mr. McEwen* (MPP) and *Mr. VanKoughnet* (MP) both expressed concern with the lack of local consultation, and with the cost of fighting the community (e.g. the standoff and hearings) vs. the \$1 cost of the harvesting license issued to LWR. Mr. VanKoughnet also expressed that the rice should be left for the local community since they had planted and nurtured it.
- *Mr. Gorham* (Conservative Candidate) felt that access should be granted to the Perry family and local residents. He felt that commercial harvesters should seed new sites to accommodate their needs. He also expressed that the Perry family had 100 years of management experience on Mud Lake and had proven their ability to conserve and manage the wild rice. He also expressed that the local community had the greatest interest in maintaining its survival.
- *Bill Flieler* (local Reeve) expressed that the OMNR/community relationship used to be good, but deteriorated when the local office was moved to another area, and that the wild rice dispute was only the most recent example of their indifference to local interests. He supported the Perry family's indigenous rights to the wild rice, and felt that they should retain their authority over the crop because of their history of establishing and maintaining the wild rice for generations.

Clearly, the perspectives expressed by the different members of the community are significant. Indigenous representatives are primarily concerned with maintaining the Perry family's authority and the cultural protocol associated with the harvest whereas non-indigenous representatives are more concerned with local consultation and the continuation of local access - though some do express their belief that the Perry family's involvement with the wild rice should be

recognised as a right of long time use. However, while differences existed between the various groups constituting this *community*, commonality and cooperation were achieved and presented as community statements, especially regarding the need for community involvement in decision-making, the belief that the Perry family should retain their right to harvest due to their history of seeding and maintenance of the wild rice crop, and their concern regarding protection of the wild rice and their local economy.

Communities are rarely uniform and may be comprised of significantly different value systems held with equal vigor. Likewise, state agents also have assumptions and values that influence their perspectives. It is critical that consultation be broad enough to clarify different perspectives, and meaningful enough to ensure communities are active agents in shaping their environments. In this way, the power of local will can be harnessed to make development plans meaningful, productive, and successful. Failing to do so means failing to accomplish these aims.

Conclusions

The evolution of events in the provincial context suddenly took form on Mud Lake through the OMNR's initiatives to further wild rice production in Ontario. This initiative came squarely into conflict with a local reality which had evolved over several generations producing a sense of attachment—informed by different cultural perspectives—to a significant local resource. It was this sudden collision between local and provincial realities that led to the 1979-82 Mud Lake wild rice confrontation.

This conflict demonstrates how regional policy objectives have historically taken shape—without local participation or any meaningful recognition of local peoples' attachment and commitment to their environment. This lack of involvement with local contexts failed to take account of the relationship between

local environments, local economies, and local cultural realities. It represented policy and implementation strategies that ignored local values, interests, access to, and authority over locally significant resources.

The community of Ardoch and the wild rice in Mud Lake was a significant site of meaning for the Algonquin residents. However, it was also a site of meaning to its local non-native inhabitants who had migrated to the area and worked to build a life in this new environment. These overlapping meanings were based on a history that was at once conflicting, and shared. The sudden presence of outsiders representing a threat to their sense of a hard won local autonomy drew forth a sense of unity in adversity which had not been articulated to any great degree prior to this conflict.

As much as this conflict was about access and control of a particular resource, this conflict was far more about different attitudes regarding the role of communities in resource management decisions and the implications this has for resource use and conservation, community and economic development, cultural identity, and cultural survival. For instance, this conflict demonstrated that when a state government makes decisions based on policy objectives without consultation with local communities, it runs the risk of damaging environmental, economic, and cultural linkages. Furthermore, it risks losing access to traditional knowledge and practices, damaging human and cultural capital, and generating considerable lack of cooperation and even outright conflict.

This study generates a number of further

because the provincial government failed to consult the local community, and because they thoroughly lacked any desire to engage with community perspectives in an open manner, the potential benefits that may have been possible through cooperation and alliance were never achieved.

questions. Could the province have used its resources to expand and enhance the value of wild rice in the region? Could the community have benefited from an open alliance of all parties? Could additional community revenues have been generated by rethinking the provincial development strategy? Could provincial residents as a whole have benefited from seeding initiatives to increase the availability of wild rice? The answers to these various questions are most likely yes. Unfortunately, because the provincial government failed to consult the local community, and because they thoroughly lacked any desire to engage with community perspectives in an open manner, the potential benefits that may have been possible through cooperation and alliance were never achieved.

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Notes

- Berneshawi, 1997; Artibise and Stelter, 1995; DCI, 1995; Cizek, 1993.
- Collision connotes the arrival of Europeans in the homelands of the indigenous peoples and the often less than harmonious nature of initial periods of transition and adaptation as each group came to terms with the presence and effects of the other.
- DeLisle, 2001.
- Asch, 1984.
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Social science research as a tool for conservation—the case of Kayan Mentarang National Park (Indonesia)

Cristina Eghenter

Summary. Has research conducted in connection with social, economic and environmental issues been used to design better policies? And have the lessons been critically evaluated and used to plan new, more appropriate strategies? Has social science research played a role in promoting and protecting the social, cultural, and economic interests of forest-dependent people? The experience of the Culture and Conservation research program, a research endeavor that lasted seven years in the interior of East Kalimantan (Indonesian Borneo), becomes a rare window from which to examine real and ideal contributions of social science research towards the achievement of environmental sustainability and social justice. It also allows us to examine both failures and successes that have shaped the challenging partnership between conservation managers and social scientists. This paper takes a look at how, and to what extent research can be used as an analytical tool in conservation management, and its results can influence policies to make management of natural resources and protected areas more equitable and more effective. The research results of the Culture and Conservation programme showed that local communities offer the best chance for the sustainable management of the Kayan Mentarang conservation area, and that their traditional institutions, if effectively supported and recognised, can contribute to deterring or minimizing the risk of encroachment by outside parties. On the basis of this and other considerations, Kayan Mentarang was the first national park in Indonesia to be granted official collaborative management status in April 2002.

At a time when global environmental and social changes happen at an unprecedented pace, the issue of sustainable management of natural resources has emerged as a critical one. The concern is about how to protect and sustainably manage natural resources to achieve social equity and guarantee future global security. For this, it is important to learn from past practices to inform and develop better policies.

Social scientists have claimed a special role for themselves in conducting research on the connections between culture, the social environment, and conservation¹. But has research conducted in connection with social, economic and environmental issues produced useful results? Have lessons been critically evaluated and used to plan new, more appropriate strategies? Has social science research been able to play a role in

promoting and protecting the social, cultur-



Figure 1. Women returning home from the fields in Krayan Hulu. By being the prime collectors of vegetables and other edible plants, women contribute greatly to sustainability and livelihood. (Courtesy Cristina Eghenter).

al, and economic interests of forest-dependent people?

The experience of the Culture and Conservation research programme², a research endeavor that lasted seven years in the interior of Indonesian Borneo, 1991-1997, is a rare window from which to examine real and ideal contributions of social science research towards the achievement of environmental sustainability and social justice. It also allows us to examine both failures and successes that have shaped the challenging partnership between conservation managers and social scientists.³

The Culture & Conservation programme and Kayan Mentarang National Park

The "Culture and Conservation," research programme (C&C Program) was born of the collaboration between the Ford Foundation and WWF Indonesia in order to: "document and support traditional rights of tenure and local resource management... and contribute to the cultural history and the forest ecology of the region." The project was implemented in conjunction with efforts to develop the management plan for the Kayan Mentarang conservation area (then a Nature Reserve) by WWF Indonesia.⁴ The C&C programme focused research on the interconnection between society and the natural environment in and around Kayan Mentarang in order to better understand the modalities of interaction of the communities with the forest around them. The main assumption was that traditional knowledge (social, ethno-botanical, ecological, and cultural) would help the planning and management of the nature reserve, and would allow the elaboration of community-based conservation strategies. The success of nature conservation was seen as depending upon the preservation of indigenous cultures and, mostly, the maintenance of traditional practices of

land tenure and natural resource management. Field studies were focused on three main themes: linguistics and oral literature; land tenure and traditional legal systems; and regional history of societies and the forest. These were carried out by about thirty scholars and students, most of whom were Indonesian, who spent three to six months in the field. Recruiting and training intentionally targeted Dayak researchers from communities in and around the Kayan Mentarang area. They were expected to have an interest in both investigating local cultures and enhancing communities' awareness of social and environmental issues.

The Kayan Mentarang conservation area, in the far interior of East Kalimantan, is the largest protected area of rainforest in Borneo and one of the largest in Southeast Asia. About half of the reserve consists of species-rich dipterocarp lowland and hill forest while mountain forest ranges up to Kayan Mentarang's highest mountain at 2,000 m. Forty percent of the park has an elevation above 1,000 m. The area is considered to be one of the world's 10 biodiversity hotspots, which contain a disproportionately high level of species diversity in a relatively small area. Kayan Mentarang National Park has also been identified as one of the Global 200 biologically outstanding ecoregions that best represent the world's biodiversity.

The history of the natural landscape of the park is deeply intertwined with the history of its people. Extensive archaeological remains in the area are witness to a long history of human settlement. Nowadays, about 21,000 Dayak people live in or near the conservation area, depending on swidden agriculture, wet rice farming, hunting, fishing, collecting and trading of forest products to fulfill their subsistence and other needs. The conservation area was gazetted in 1980 as

a strict nature reserve (*cagar alam*) and designated as a National Park in 1996.

The research approach

The C&C programme based its methodological approach on social science research techniques and the fieldwork experience of the anthropological tradition. Most of the data were collected during two- to three-month periods in the field and, often, repeated visits to the same communities over a period of time. This was especially feasible for locally recruited researchers. The strategy rested on a shared long-term commitment to the object and place of our study and on our belief that research can provide deeper and more thorough insights into local traditions, history, and practices. The research perspective emphasised the study of both present and past activities in order to compare events at different points in time and find patterns in the ways in which people had exploited resources and responded to changing social, economic, and environmental circumstances over time. The historical contextualisation of people-forest interactions was expected to shed light on circumstances and events that might have important impact on future decisions for the management of the conservation area and the development of the surrounding region.

Formal training in interview techniques, surveys, and ethno-historical methods was provided to project participants. Intense group discussions were devoted to learning how to develop a research plan, identify key research questions, and envision the complexity of the possible linkages between events or practices and their economic, cultural, social, environmental, and historical circumstances. In addition, rapid demographic and socio-economic surveys were carried out to collect essential baseline data to better assess the overall context of the communities in and around the park.

The research stressed team work and collaboration among the researchers. The main objectives were to encourage exchange and cross-checking of information among researchers, reinforce the awareness of the degree of interconnectedness of the research topics investigated, and build team spirit. Evaluation sessions on the progress made in the research were also based on the participation and input from all the team members. C&C's culture-sensitive researchers and the remarkably open and hospitable local communities also helped create a special bonding. Researchers and communities established and maintained long-term relations of empathy and genuine collaboration that remained a salient feature of the C&C field experience along the years in and around the Kayan Mentarang area.⁵ The research experience of C&C was not, however, narrowly restricted to the use of traditional social science methods. It was under this programme that the first experiments with community sketch maps took place, which later developed into the community mapping program, a trademark of the Kayan Mentarang conservation area. These maps recorded local people's knowledge and decisions about land and resource use, as well as their claims to those resources.

Assessing the value of a research and training programme like C&C calls for more than a long list of remarkable products, achievements, and initiatives carried out under its auspices. The interconnectedness of the priorities of the research agenda with those of the conservation area requires that the research output be evaluated in terms of its contribution toward the achievement of the national park management objectives. It is important to discern what themes and issues have emerged most forcefully from the reports, and what they tell us about local management and practices, environmental knowledge, and people-forest interactions. It is also necessary to assess

whether the social science research that has been conducted under the auspices of C&C has improved our understanding of the local context and secured useful results for the national park.

Research that makes a difference!



Figure 2. A woman training younger women about making clay pots. Clay pots used to be the traditional cooking pots in the interior of Borneo until they were replaced by aluminium rice cookers (Long Jelet, sub-district of Pujungan, East Kalimantan, Indonesia). (Courtesy Cristina Eghenter).

The research results first established that the communities in the national park area are still "traditional communities" (*masyarakat adat*), largely regulated by customary law in the conduct of their daily affairs and the management of natural resources. This was an essential point with regard to the long-term man-

agement goal of the area and the need to involve local communities in conservation. It also justified the efforts to seek official recognition for communities' claims on traditional land and resources from the district government and the Ministry of Forestry. The extensive documentation on land tenure systems and regulations for the exploitation of forest resources helped bring the issue of customary rights to the atten-

tion of government officials in the Bulungan district (*Kabupaten*) and the Ministry of Forestry. The role of traditional institutions, presently reflected in institutions like the customary council (*lembaga adat*) and the customary chief (*kepala adat*), is key to understanding the communities' views of rights and the way they deliberate on issues of forest management as well as social responsibilities. The prominent role of customary institutions in the management of forest resources supported the claim that these institutions can become the privileged interlocutors in planning for the management of the conservation area.

Several researchers described aspects of what is usually referred to as an "indigenous management system," or the ability of local people to use, alter, regulate, and restore land and other natural resources in their environment. Adding to the growing literature on the environmentally sustainable function of shifting cultivation in tropical forests under stable conditions,⁷ their research provides important evidence that local people's agricultural practices are not intrinsically destructive of the environment but rather draw on knowledge and understanding of its micro-dynamics. The wide range of forest plants and crop varieties used by local communities also suggests a high degree of biodiversity that has been managed and intentionally maintained for centuries. As we would expect in all communities, there are episodes of non-adherence to traditional rules, yet the overall conformity of behavior indicates a high degree of social cohesion and the community's vital dependence on the forest for its well-being.

The definitive archaeological and historical evidence of the long presence of Dayak people in the Kayan Mentarang area are a powerful reminder that these peoples' practices and interactions with the forest also have a long history. And the recognition of the local people's dependence on forest

resources and their economic needs is evidence of their entitlements to the area. The research results of the C&C programme were used to have the status of the nature reserve changed to that of national park (*taman nasional*). While in a nature reserve all human settlements are in principle excluded and human activities are illegal, in

New economic opportunities have caused adjustments in patterns of exploitation of natural resources... [which] contradicts stale formulations and stereotypical views of timeless, backward indigenous people... [yet] economic and social changes have not destroyed traditional management practices

a national park "traditional use" of natural resources by local residents is permitted. An evaluation team sent by the Ministry of Forestry in 1994 endorsed the WWF Indonesia recommendation for the change of status, which became official in 1996. New economic opportunities have caused changes and adjustments in patterns of exploitation of

natural resources in certain areas of the park. This realisation is important in that it contradicts stale formulations and stereotypical views of timeless, backward indigenous people still entertained by some government officials, urban residents, and romantic environmentalists. At the same time, economic and social changes have not destroyed traditional management practices which remain largely in place. This supports the argument that the communities themselves could prove to be the best chance for the sustainable management of the Kayan Mentarang conservation area, and their institutions, if effectively supported and recognised, could contribute to deterring or minimizing the risk of encroachment by outside parties.

When the introduction for the edited volume Culture and Conservation was written in the summer of 1998, the WWF Kayan Mentarang was still in the midst of lobbying

with the Ministry of Forestry for the recognition of indigenous people's rights to manage the park and its resources. The data from the Culture and Conservation research programme and the community mapping programme provided the main evidence that the conservation area was first and foremost a *tanah adat*, historically and continuously claimed and managed by the communities. Moreover, it proved that local communities had the experience and knowledge to manage the forest sustainably. The efforts of the communities, the customary leaders, and WWF to obtain a community-based management for the park had been inexhaustible yet the kind of policy that would allow the communities of the Kayan Mentarang National Park to become managers of their own forest seemed still so far away, almost unattainable.

Fundamental social and political changes occurred in Indonesia in 1998-1999. As part of the reform movement that was triggered by the new political climate, a new Forestry law was issued (UU No 41/1999) and the law on decentralisation and regional autonomy was promulgated (UU No 22/1999). Both legislations open new possibilities for both conservation policy and the rights of indigenous communities. Under these circumstances, new models of national park management could be designed to accommodate the aspirations of indigenous people and engage the new districts.

In April 2002, the Ministry of Forestry issued a decree sanctioning the collaborative management for the Kayan Mentarang National Park, a first in Indonesia. Accordingly, policies concerning the management of the conservation area

In April 2002, the Ministry of Forestry issued a decree sanctioning the collaborative management for the Kayan Mentarang National Park, a first in Indonesia [...] in many ways responding to the findings of the Culture and Conservation research program



Figure 3. Artistic traditions like wood carving have undergone a revival as expressions of Dayak ethnic identity after decentralisation and regional autonomy law have come into effect and democratic reform has begun in Indonesia (Long Berini, sub-district of Pujungan, East Kalimantan, Indonesia) (Courtesy Cristina Eghenter).

will be decided by a Policy Board (DPK), which includes representatives of the Central Government (Agency for Forest Protection and Nature Conservation), representatives of the Provincial and District governments, and representatives of the local communities through FoMMA (Alliance of the Indigenous People of the Kayan Mentarang National Park).

In many ways, this innovative management model responds to an important recommendation based on the findings of the Culture and Conservation research program: sustainability of any conservation programme is contingent on the degree to which complexity and diversity of the social and economic context are recognised, and flexible and locally appropriate measures of conservation are adopted. The unique circumstances of the Kayan Mentarang National Park are the historical and cultural heritage of the Dayak people who have been living and managing the forest for centuries.

Challenges to conservation managers

While the output of C&C's research activities served the conservation management objectives of the Kayan Mentarang National Park and helped raise the level of support for the park by local people and government offi-

cial, research findings also brought to light the complexities of the social, environmental, political, and historical context of the Kayan Mentarang conservation area. Dayak village communities are increasingly heterogeneous in their ethnic and socio-professional composition. Yet, limited access to information, the resilience of stereotyped views, and preference for quick results might encourage park managers to regard forest-dwelling communities as homogeneous entities in relatively uncomplicated situations, and to adopt common solutions for the conservation area. Although more difficult and time consuming, acknowledging the complexity and diversity of the social and economic context is necessary. Conservation managers would need to take these complexities into consideration and design flexible and locally appropriate measures of conservation. This is a challenging task but would ultimately enhance the project's sustainability and effectiveness in the long term.

Several of the C&C reports focusing on history point to the reality of overlapping territorial claims caused by long histories of migrations, and by the policies of population resettlement and regrouping implemented by the government in the 1970s. The results of community mapping also underscored the need to take into consideration historical factors before finalizing territorial maps and settling boundary issues between old and new settlements. Similarly, the initial focus on the interactions between people and forest inside the conservation area proved too narrow when research findings indicated the increasing number of ex-residents of the park area who have moved back, and the significant (and often exploitative) impact of

Conservation managers need to respond to the complexity and diversity of the social context, and design flexible and locally appropriate measures of conservation. This is a challenging but absolutely necessary task

outsiders coming into the conservation area for the purpose of collecting forest products and resisting rulings by their hosts' customary council. Discriminations that rock the social fabric of the village communities do not, however, always originate from the outside. The customary law is the law of the aristocratic category that has maintained economic and social supremacy, unchallenged until very recently, in Kenyah and Kayan communities. New developments, education, and the Christian faith are eroding the old privileges of the higher strata and providing more opportunities for educated and enterprising individuals to climb to power.

Local social researchers: strengthening "ownership" in the research endeavor

The C&C efforts to hire and train local researchers proved correct in the sense that it stimulated interest in local cultures and provided young and "educated" Dayak with an opportunity to know more about their own history and cultural heritage. The experience also exposed the need to expand training sessions with special workshops for improving written communication and style that would enable Dayak researchers to adjust their contributions to national and international standards. C&C research activities that initially saw a mix of foreign, Indonesian, and Dayak researchers became towards the end of the programme the monopoly of local social scientists, native to the communities that they were now studying. What were the advantages and shortcomings of this strategy?

Sillitoe⁸ asserts that employing nationals from the region of the project can prove cost and time efficient, as they would be able to conduct the research more quickly. This is also an important (and attractive) consideration for project planners and managers. The facility with the language and the lack of cultural shock allow the local

researchers to immediately focus on key questions of interest to the research. The familiarity with members of their community can also increase acceptance of research and informants' goodwill, and promote support within the community. Employing local researchers has, however, some drawbacks, of which we need to be aware. Sillitoe points to epistemological concerns, such as the elimination of the "distance" of the researcher, one of the basic tenets of traditional fieldwork. He also argues that subjective factors such as "losing face" can constrain the effectiveness of the role of researchers in their own communities. Along similar lines, it is important to note that local researchers face another set of challenges, precisely by being "insiders" and thus socially positioned in their own communities. In the C&C experience, the example of ethno-historical research more than any other brought the issue of self-censorship to light. The information on particular events would not be recorded nor discussed because it might have exposed the "darker" side of the community or stirred emotions about tragic, past events still alive in the collective memory. Several attempts at discussing ways to separate the issues of researching from writing and returning results only partially managed to convince some of the staff that their work as researchers did not necessarily undermine their social position as members of that community. Moreover, their own informants were also concerned about stories that might reflect unfavorably on other communities. They sometimes chose not to tell the entire story and share their knowledge.

The role of social research and inter-disciplinarity in conservation

The brief evaluation of the usefulness of the outcome of the C&C programme allows for a re-interpretation of statements contained in the original WWF proposal in light of what actually happened. While there is little doubt that C&C helped train researchers, contributed to improving our knowledge of the



Figure 4. Indigenous people in Krayan Hulu. their continuous presence in the territory, knowledge of the forest and customary regulations for the sustainable use of natural resources qualify them as best managers for the conservation area. (Courtesy Cristina Eghenter).

cultural and environmental history of the region, generated local interest in research and support for the Kayan Mentarang conservation area, and documented forms of local resource management, it remains unclear whether C&C enabled conservation managers to design better management strategies. The uncertainty has less to do with the quality of the data collected than with current thinking in many conservation organisations. Wells convincingly argued that several “unproven and optimistic assumptions” are often made in Integrated Conservation and Development Projects with regard to biodiversity conservation and sustainable economic development, despite the fact that results have for the most part fallen short of expectations.⁹ Similarly, there seems to exist a sequence of causally related assumptions on the “presumed” key role of local people in sustainable management of protected areas: Indigenous people are good conservationists, hence they would make good managers of the conservation area, and hence it is important to study them. In these terms, the protected-area management’s prevailing position of blaming local residents for destroying the environ-

ment in the past can easily turn into the opposite, yet equally simplistic position — if unsupported by hard evidence — of praising local residents as the natural managers of biodiversity.

How should a research programme fit into this framework? Must it set out to prove that local people are good managers of the environment or, rather, turn such a premise into a working hypothesis that could or could not be borne out in the final results? What lessons can be drawn from the C&C experience? Research can and should be effectively used as a means to critically question and test key assumptions implicit in the project’s objectives. Reflecting on epistemological issues, Dove maintains that social sciences are in a position to address questions that transcend discipline boundaries by problematising other fields.¹⁰ In this case, questioning premises or unproven assumptions made in the field of biodiversity conservation and sustainable development is a task that research programs like C&C can and must undertake. Such assumptions may have arisen because of political reasons or financial considerations, or they may be ideas taken for granted and reproduced within the common discourse prevalent in conservation circles. According to Ingerson, for example, the view that traditional knowledge and practices of people in a conservation area are keys to the sustainable management of that area might have been encouraged by anthropologists and advocates themselves, who have made use of romanticised notions of forest peoples as defenders of the environment to prompt governments and international foundations to fund projects for the participation of people in protected-area management.¹¹

Although the C&C programme did not initially set out to test the validity of certain premises in the WWF proposal, successive developments encouraged reflection on how this and future research programs could best fulfill this purpose. Most importantly,

the results of C&C research preclude making simplistic and sweeping statements in support of regarding local communities as the best possible conservationists. While there is strong evidence of the existence of forms of indigenous forest management and traditional regulation of resource use, there is also evidence of overexploitation of protected species, motivated by the desire to make

Ambiguities concerning the criteria and modalities of research in the context of a conservation and development project became even more apparent when local communities raised questions concerning the practical relevance of the results with regard to their immediate needs

economic profits in a competitive situation.

C&C's research did not take place without difficulties. Moreover, ambiguities concerning the criteria and modalities of research in the context of a conservation and development project have arisen throughout the three phases of C&C. These became even more apparent when local communities raised occasional questions concerning the

value of research activities and the practical relevance of the results with regard to their immediate needs.¹² Difficulties point to a deficient mode of collaboration between research (C&C) and project (WWF) staff, who failed to develop a common language and framework of reference. While anthropologists and other researchers working in conservation and development projects must ask themselves whether and how social science research can contribute to conservation, conservation and park management specialists also need to think about why and how they need to make use of social science research in order to better meet the needs of a national park and the people in it. Since the planning phase, the C&C experience lacked the concerted efforts that would have resulted in clear objectives for collaboration and reciprocal expectations. After the initial focus on documenting the social, historical, economic, and ecological context of the communities in the conservation area, the

C&C research team was often alone in trying to define the research objectives of subsequent phases and formulate hypotheses, with both their field data and conservation area's priorities in mind.

The mutual dependence of people and forests in this part of the interior of Kalimantan require that conservation efforts be based on the recognition of the importance of the human as well as natural components of the environment. From the point of view of a research program, this translates into the need for an interdisciplinary approach, whereby issues are investigated from a multiplicity of perspectives and promote a tighter coordination of research components. Sillitoe¹³ contends that "interdisciplinary work will be central to methodological advances in this development research". If we wish to obtain results that are relevant to the project, the research design must be based on a strong multi-disciplinary and inter-disciplinary perspective. Topics need not be guided by traditional disciplinary distinctions, but rather, investigated in ways that explicitly address the concerns of the project.

C&C exhibited a clear inter-disciplinary aspiration and evolved by pursuing interconnected topics and themes about the complex mosaic of peoples and environment in the interior of Kalimantan. It identified topics for further inter-disciplinary research and built on these possibilities within the limits of its strong social science denominator. A better coordination with the biology conservation side would have promoted the integration of more biological and ecological input in the research plan. It is precisely truly inter-disciplinary research that would secure the holistic approach that is so often claimed by the social sciences and the discipline of anthropology in particular. The integration of results from various perspectives, like linguistics and geology, or ethno-botany and history, can further our understanding of local communities as part of their natural,

social, historical environment and make sure that strategies of conservation and sustainable development acknowledge these connections.

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Notes

- 1 Headland 1997; Sponsel, Headland, and Bailey 1996; Sellato 2001.
- 2 This paper is based on a more extensive description of the Culture and Conservation Research Programme which was written as the introduction (by Cristina Eghenter and Bernard Sellato) to an edited volume: Eghenter, Sellato and Devung, 2003. Support for this publication from CIFOR, Ford Foundation, UNESCO and WWF Indonesia is gratefully acknowledged.
- 3 See also Chartier and Sellato 2002; Dove 1992; Eghenter 2000a; Persoon and van Est 1998; Zerner 1994; King 2002 on the difficulties and challenges of research in connection with a conservation agenda.
- 4 For further specifics on C&C project proposals, see list in the edited volume, Eghenter, Sellato and Devung, 2003.
- 5 Dove and Nugroho 1994.
- 7 On shifting cultivation see also Dove 1988; Colfer 1993; Conklin 1957.
- 8 Sillitoe, 1998:235.
- 9 Wells 1995: 322-323.
- 10 Dove and Kammen 1997: 99.
- 11 Ingerson 1997; Conklin and Graham, 1995.
- 12 Eghenter, 1999.
- 13 Sillitoe, 1998: 231.

Can traditions of tolerance help minimise conflict? An exploration of cultural factors supporting human- wildlife coexistence

Francine Madden

Summary. Modern conservation strategies and programs that further wildlife conservation, including those that seek to mitigate human-wildlife conflict, have generally ignored indigenous and traditional cultural characteristics that can foster tolerance and coexistence between humans and wildlife. In many cultures and communities around the world, traditional knowledge and beliefs recognise spiritual and material benefits from wildlife, thereby fostering tolerance of the costs that wildlife sometimes imposes. While some human beliefs and needs conflict with the needs and lives of wildlife, there is much to learn from traditional, indigenous and minority cultures whose beliefs and lifestyles foster not only tolerance but in some cases beneficial coexistence of people and wildlife. This article explores several illustrative cases of tolerance and coexistence. It argues that conservation initiatives should assess and build on cultural values of coexistence and tolerance. By incorporating supportive cultural values and beliefs, conservation initiatives can address the complex challenges of human-wildlife conflict more effectively, and can contribute to the vitality of indigenous and traditional cultures.

The previously neglected issue of human-wildlife conflict is increasingly recognised as a growing problem for conservation. Calls to address this problem are summarised in *Recommendation 20, Preventing and Mitigating Human-Wildlife Conflicts* developed at the Vth IUCN World Parks Congress (Durban, South Africa 2003). Existing responses to the problem usually are narrowly focused on conflict (e.g., diagnosis of the problem and prescription of remedies) and comparatively neglect a broader social and cultural analysis. Human-wildlife conflict is identified as an issue when, for example, a tiger kills someone's cow, a baboon raids someone's crops, or an elephant tramples someone's home killing the person inside and/or when a person or community retaliates by killing wildlife it perceives to be a potential or real threat to its person, its property or its livelihood. Such aspects of these problems are real and serious, but they are only part of the full picture. They overlooked, for instance, elements of human-wildlife tolerance and coexistence that also exist, although are less dramatic and visible, and can be incorporated into strategies and programs designed to mitigate or prevent conflict.

The narrow, conflict-oriented view of human-wildlife interaction reflects a more general tendency whereby we conservationists too often view people exclusively as obstacles rather than untapped assets for conservation. But human-wildlife conflict is not a neatly defined variable, which is either present or absent. Rather, conflict is just part of a spectrum that stretches from violent, constant problems to a relatively peaceful, even mutually supportive coexistence. The opposite of conflict is not the absence of conflict, but harmonious, even mutually supportive coexistence in which humans play a positive role.

In most "conflict scenarios", there is an element of coexistence that is often underappreciated and "deserves fuller investigation for lessons on good management of local wildlife".¹ By examining the apparent problems associated with human-wildlife interactions, one might easily perceive a situation as purely conflictual; whereas, in reality, people may feel signifi-

The opposite of conflict is not the absence of conflict, but harmonious, even mutually supportive coexistence in which humans play a positive role.

cant degrees of tolerance toward wildlife, or even perceive benefits from its presence. To understand a conservation challenge involving conflict, and to define strategies for mitigating conflict, we need to analyze these distinct variables associated with coexistence alongside those associated with conflict. In this way, conservationists can identify specific ways of working in cooperation with local people toward common goals as part of an overall conservation strategy.

Culture is a significant contributor to both coexistence and conflict. Cultural attitudes and culturally shaped behavior toward wildlife contribute to the level of tolerance that people feel and demonstrate towards intrusion, predation, and destruction caused by wildlife. It also affects the degree to which people react with punitive behavior against wildlife, protected areas and valuable habitats, or resist policies or officials with relevant responsibilities. While people's beliefs and behavior are sometimes perceived as an "obstacle" to conservation, a more complete understanding embraces people not as an outside threat, but as an internal variable with characteristics that can not only exacerbate but also minimise conflict. If we examine the conservation equation from the perspective that people offer opportunities and strengths, not just threats or weaknesses, we may discover rich, complex, pro-conservation cultural roots that can contribute to effective wildlife conservation initiatives.

The nature of these roots will vary widely, but they all may help, at least in part, to rebuild tolerance where it has been eroded because of government intervention, poorly conceived and managed conservation programs, or exclusion from management or ownership of resources. As conservationists and as humanists who care about conservation, we should attend to the diverse patterns of culture and behavior of people who live with wildlife, as much as to the diverse

genetic makeup and behavior of wildlife species.

Cultural Lessons of Tolerance

Some of the most fundamental values of some cultures support tolerance of wildlife. "Nature has been the foundation of all human cultures...and any healthy society of the future will need to incorporate ways and means of linking people with the natural world."² Many cultures hold a "holistic world view with people as a part of the environment, rather than distinct from it, with an ideology of "respect for living things, particularly animal species."³ "Indigenous and traditional peoples frequently view themselves as guardians and stewards of nature," and often understand their knowledge of biodiversity and of resource management as "emanating from a *spiritual* base."⁴

Some cultures view good and evil as necessary complements, in contrast to the rigid either-or dualism that characterises some aspects of Western thought. In other words, good exists side by side with evil, and therefore when bad things happen, it is understood that this is simply the way the world works.⁵ Hardship is tolerated as a complement to good fortune; they are halves of a whole system and together, a complete way of life. In a sense this premise serves as a cultural insurance, helping people to accept misfortune when it comes. Sometimes that misfortune comes in the form of wildlife raiding crops, killing livestock, or attacking a person. Standing alone, such a belief system is obviously not adequate to address today's human-wildlife conflict situations. Nor should passivity with respect to retaliation serve as an excuse to ignore the costs of conflict. Such beliefs and values can, however, help members of a community maintain patience and flexibility and accept some level of costs associated with maintaining wildlife populations.

This is not to claim that every traditional,

indigenous, or non-Western culture invariably tolerates wildlife. Even those that do have limits to their tolerance for economic and personal loss. Some cultures maintain beliefs about the management of nature and its resources that may be incompatible with today's shrinking resource base. Thus, "traditional conservation beliefs...are not ready made prescriptions for today's world."⁶ However, it is a mistake to assume that the presence or absence of active traditional conservation strategies equates with the presence or absence of cultural tolerance. It is also a mistake to design every conservation strategy on the assumption that cultural beliefs involve a separation or antipathy between people and wildlife. In fact, some situations will offer opportunities to tap into cultural values that support conservation.

Stories and other cultural creations often serve as cultural "teaching aids," embodying religious and cultural lessons about the rules, beliefs, practices and values of a community. Many such stories teach respect for and a strong relationship with nature. Religious systems incorporate associations with animals that build respect for wildlife. The values such stories and systems impart may encourage tolerance to wildlife interaction.

For instance, the Hindu epic, *Ramayana*, teaches in a colorful and dramatic way why people should respect monkeys, as they are proven faithful servants of the gods and an ally to the people. Thus a taboo that was established against hunting of monkeys still exists in many areas in Southeast Asia today⁷. Similarly, in Buddhist tradition, temples are often filled with artistic replicas of

tigers, rhinos, elephants and other wildlife species promoting the belief that wildlife have a sacred function in reflecting the unified world of people, animals and gods. In another example, Hindu farmers may find spiritual consolation for material losses due to elephants' incursions into fields through their belief in the elephant-headed god Ganesh, a friendly, beloved god who has the power to impart or do away with success, eliminate or set up obstacles, satisfy

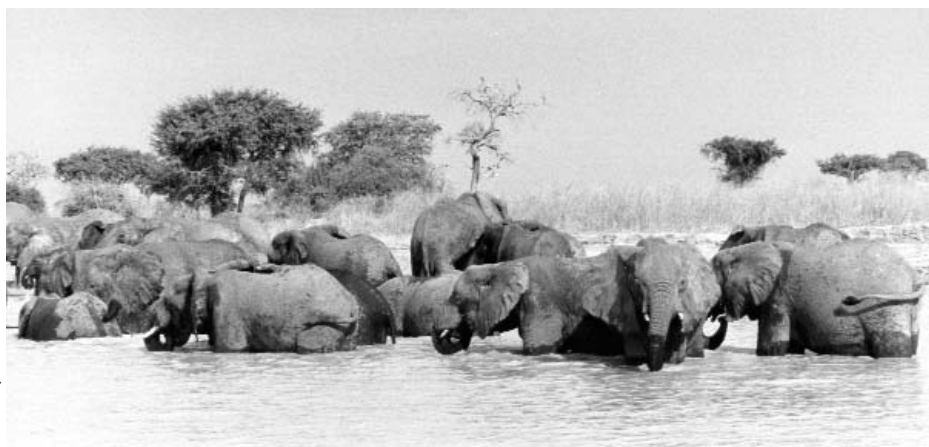


Figure 1. In the floodplain of Waza Logone elephant herds (sometimes composed of hundreds of animals) are known to devastate croplands and take human lives in their migration patterns. The local residents have hardly any means to defend themselves, as the law forbids them to harm the elephants in any way. (Courtesy Grazia Borrini-Feyerabend)

or disregard wishes, and is considered the god of literacy.⁸

Elephants in Asia: material costs and spiritual benefits

One of the most formidable instigators of human-wildlife conflict in Asia and Africa, elephants cause hundreds of deaths each year and untold economic losses to crops and property in their raids. Understandably, retaliation against these animals is increasing where damages add up and little is done by governments whose laws prohibit people from acting in self-defense, yet fail to offer alternative means to effectively mitigate and prevent human-elephant conflict.

The conflict needs to be addressed or it will continue to escalate. Yet, in contrast to Western societies that have completely eradicated entire species that were much less intrusive and destructive than elephants, many Asian cultures, even bearing the burden of high levels of personal and economic threat and devastation, still manage to demonstrate a high level of tolerance to the pachyderms' frequent raids.

On this point, Arun Venkataraman attributes much of the success of wildlife conservation in a heavily populated India to the peoples' cultural belief in and propensity for coexistence. Of the situation near Bhadra Wildlife Sanctuary (Project Tiger Reserve) in Karnataka, he writes that "when crop raiding [by elephants] occurred, it was well tolerated by local communities who were largely caste Hindu cultivators. When asked about the problem, local inhabitants were under unanimous opinion that elephants had an equal right to their lands."⁹ He adds that pad marks from elephants in cultivated fields were actually venerated and elephants' visits were considered good omens.

Birds in Borneo: pests or resources?

In Borneo, the most powerful god of the Iban people is a sun-bird god called Singalang Burong. Singalang Burong sometimes appears before humans as a Brahminy kite. "As just another bird, the Brahminy kite angers villagers by stealing chickens, but when it assumes its identity as bird-god the Brahminy kite takes on much greater significance as the bringer of omens of war" and thus its presence is treated with respect that extends well beyond tolerance.¹⁰

Nearby in the highlands, the people of the Kelabit tribe interpret crop raiding by the many migratory bird species in a much broader way than simply as a nuisance. In fact, the birds' migratory behavior is an appreciated omen to people about the rice-

planting cycle and the certainty of a harvest. The birds' arrival is determined by climatic qualities that signify much more accurately than a set calendar the change of seasons and the best time to initiate various agricultural practices. Four particular species have been determined by the Kelabit to be the most reliable timing indicators for their needs. The birds' arrival also gives some peace of mind to farmers, who live in an uncertain world marked by frequent famines. Interestingly, when the Kelabit were convinced one season to alter the type of rice they would plant so as to improve crop yields, their new rice crop grew superbly, but could not be harvested before the migratory birds arrived, and thus their crops were lost to the birds. Instead of blaming and retaliating against the birds for their devastating and costly crop-raiding, the Kelabit people saw this event as an omen from the birds about the importance of using rice types that matured and could be harvested in a timely fashion.¹¹ Conceivably, an alternative world view might have resulted in the community investing in toxic chemicals to rid themselves of these destructive birds.

Shona reverence for wildlife

In another example, a small community of Shona people living in the Kagora region of rural Zimbabwe exemplifies how traditional cultural beliefs promote coexistence between humans and wildlife. The Shona ethic includes a respect for and a moral attitude toward nature, as well as restraint in resource exploitation. Building on this ethic, the Shona have totems which are all connected to wild animals. In Shona society a person has a special connection with a totem animal. The totem animal is not killed or eaten and thus species like leopards, lions, python, hyena, wild pig, and porcupines are protected and revered by those who have them as their totem animals. Further, baboons are tolerated more in Kagora than in many other areas in Africa,

as they are considered messengers of a famous founder chief known as the *mhundo*. "Their lairs are often very close to homes and there is a lot of interaction. If someone's crops are constantly destroyed by these animals, that person is taken to be flouting local rules. Some say land without baboons is not worth living in, mainly because their presence is a sure sign that dangerous animals like the leopard, which is fond of baboon flesh, is absent."¹²

Maasai displacement by parks: from "second cattle" to the "government's cattle"

It is widely recognised that a pastoralist lifestyle is often more compatible with conservation and prevention of human-wildlife conflict than is a sedentary, agricultural mode of livelihood. While the Maasai, transhumant pastoralists of East Africa, traditionally endured some livestock depredation by wild predators, generally these herders coexisted with wildlife without any major conflicts, until formalised development and conservation initiatives took root in the region.¹³ Historically, the Maasai's livestock and local wildlife followed similar seasonal routes in East Africa and coexisted relatively peacefully side by side. "Many Maasai elders claim that wildlife traditionally was used as 'second cattle,'" but only during times of extreme drought when their own herds were severely depleted; thus "reliance on second cattle helps to explain the traditional Maasai tolerance toward wildlife."¹⁴

Over the last several decades, however, the establishment of national parks and protected areas excluded the Maasai from access to traditional water resources and prevented them from following traditional nomadic migratory routes, especially during the dry season. This is one factor in the shift of some Maasai from pastoralist to settled agricultural lifestyles that has increased the potential for conflicts with wildlife, and fostered an increase in intensive land use to

the detriment of wildlife, including the subdivision and sale of critical wildlife habitat.¹⁵ The prohibition of occasional consumption of wildlife in emergencies or hard times has also reportedly contributed to a decline in Maasai economic well-being.¹⁶

The wildlife of protected areas still largely (60-85%) depends on dispersal areas outside the parks,¹⁷ which inevitably brings them in contact with pastoralists and their herds. Maasai feel keenly the inequity in treatment whereby the Maasai's cattle are banned from the park, while the "government's cattle," as the Maasai now refer to wildlife, are allowed outside it. This combination of conservation policies that interfere with traditional practices of coexistence has increased resentment of, and reduced cooperation with, governmental conservation policies. The sum result is a simultaneous decline in the Maasai's economic well-being, autonomy and ability to maintain their distinctive culture, an increase in resentment of and conflict with conservation initiatives and authorities, and a rise in mutually harmful conflict between the Maasai and wildlife.

Haisla spiritual value of wildlife: shaping government conservation policy

The greater Kitlope ecosystem on the north coast of British Columbia is a critical homeland to grizzly bears and black bears. This is also the heartland of the Haisla Nation, where the grizzly bear is considered an animal of great spiritual power. Their tradition strictly forbids killing a grizzly bear, except in self-defense or for food. Alarmed in the last decade that both bear populations were in serious decline (thought to be because of trophy hunting), in 1994 the Haisla took it upon themselves to ban all hunting of any bears in Kitlope until populations recovered sufficiently. Working with conservationists, the Haisla people took this initiative on and then asked others to join the moratorium. As a result, the British Columbia govern-

ment announced a one-year ban on grizzly bear hunting, essentially canceling the 1994 bear hunt in Kitlope. Longer term restrictions on bear hunting were subsequently put into place with resulting improved bear populations in the region.¹⁸

This example of an indigenous community's reverence for and tolerance of one of the most dangerous mammals in North America is an excellent example of human-wildlife coexistence. Realizing that the root of this coexistence is imbedded in cultural beliefs and attitudes, we see the power of cultural tolerance in determining the success of conservation and the prevention of human-wildlife conflict. This belief about an intertwining of nature and culture is not unique to the Haisla. Many traditional and local cultures maintain beneficial beliefs about their relationship with nature and wildlife, and thus demonstrate tolerance and even reverence for wildlife. Within this relationship is a dependence on wildlife. If the Haisla no longer had grizzly bears, they would lose their very real, tangible connection to this spiritual power. This intense awareness, rooted in tradition, makes the Haisla more willing to tolerate its presence and occasional disturbance.

Patterns of Tolerance

The selection of cases discussed above is anecdotal and intended to illustrate the potential that culture holds as a resource. These cases, however, are representative of a wider body of examples, including the Tuareg and elephants in the Sahel,¹⁹ the Maldharis and the lions of Gir in Gujarat, India,²⁰ Buddhists and tigers in Asia²¹ and others. More exhaustive and systematic analysis of a larger number of cases is needed to assess the linkages between cultural beliefs and practices of tolerance, context-specific level of human-wildlife coexistence and their local and global relevance for conservation. In the meantime, anecdotal evidence from a wide diversity of prac-

tices and beliefs that can support coexistence with wildlife suggests a number of initial conclusions.

First, in some societies, culturally transmitted knowledge and beliefs shape behavior to prevent damages and constrain people from excessive retaliation when wildlife cause economic loss or inflict physical harm. The Kelabit of Borneo know that they can time farming decisions according to the arrival of certain migratory birds. The Maasai pastoralists of East Africa historically have relied on wild animals, their "second cattle," for sustenance when times are hard. Shona people in Zimbabwe are more tolerant of the presence of baboons because they indicate that leopards are unlikely to be nearby. Thus, ecological knowledge enables people to gain material benefits that offset crop-raiding, livestock predation and other costs they suffer from wildlife and reduce the incentive for retaliation.

Ecological knowledge enables people to gain material benefits that offset crop-raiding, livestock predation and other costs they suffer from wildlife and reduce the incentive for retaliation.

Equally important in these examples are religious and spiritual beliefs about animals. For certain peoples in Borneo, migratory birds are associated with divinity and bring omens. For many Hindus, monkeys are associated with loyalty to the gods and are considered a friend of the people. For the Haisla people of British Columbia, the grizzly bear has great spiritual importance. Farmers near the Bhadra wildlife sanctuary in India revere elephant pad marks left in their fields. Despite the occasional costs, these people gain spiritual and religious rewards from wildlife encouraging them to tolerate harm due to wildlife and refrain from retaliation.

These tangible and intangible rewards stemming from knowledge and belief are valuable for conservation. The spiritual rewards,

for instance, are no less valid, rational or important than the motivations of the backpacker who treks into thinly populated territory to commune with nature. An ecotourist actively spends economic resources in order to visit and observe wildlife at distant sites; a villager may endure higher economic losses as a side effect of sharing living space with the wildlife that he or she reveres. In every case, these values offer critical support for conservation and must be assessed and built upon in any strategy for conservation.

Despite the occasional costs, people gain spiritual and religious rewards from wildlife, encouraging them to tolerate harm due to wildlife and refrain from retaliation

In some cases the holders of traditional beliefs and knowledge can build upon them to mitigate conflict within the larger political or legal system, as in the example of the Haisla, who persuaded the government of British Columbia to enact a moratorium on hunting of grizzlies. In contrast, when cultural values relating to wildlife are ignored, the best-intentioned plans for development or for conservation may interfere with traditional patterns of human-wildlife coexistence and cause an increase in conflict both between humans and wildlife and between humans over wildlife, as in the case of the Maasai pastoralists of East Africa.

Recommendations

Further research on cultural patterns of tolerance and conflict is needed. It should analyze and compare situations involving both coexistence and conflict, as well as situations in which coexistence has been replaced by conflict and vice versa, in order to understand the contributing factors and design appropriate conservation strategies. In the meantime, however, some practical implications for conservationists are clear without further research.

First, a review of cultural factors should

always be part of the assessment that precedes the development of a conservation strategy or project by local, national or international institutions. Similarly, environmental assessments for development projects should include attention to human-wildlife interactions, including the existence of cultural features that support coexistence. In such assessments, cultural beliefs, knowledge and practices that support coexistence should be catalogued among opportunities, just as those that contribute to conflict should be identified as threats.²² Importantly, the assessment should identify factors that have supported coexistence and discouraged conflict even in situations where there is no apparent conflict. Such factors will be of great value in understanding conflict issues more generally, as well as locally, if conditions change such that human-wildlife tension increases.

... cultural beliefs, knowledge and practices that support coexistence should be catalogued among opportunities, just as those that contribute to conflict should be identified as threats...

Second, following such an assessment, local traditions and practices contributing to coexistence should be integrated into policies and programs to address human-wildlife conflict specifically, and wildlife conservation and sustainable development more generally. Projects and policies should be designed to both minimise conflict and retaliation and support, rather than interfere with, traditions of coexistence. Even where cultural and spiritual beliefs foster tolerance for wildlife, that tolerance is easily eroded when conservation initiatives fail to reflect local values and voices. Embracing cultural characteristics of tolerance has additional advantages. It enables the conservationist to be a supportive partner with the community rather than dealing with local people as if they are primarily obstacles to conservation. It helps to integrate perpetuation of nature and culture so that nature conservation and the maintenance and vitality of a culture can be

mutually supportive.

Traditions of tolerance and coexistence do not guarantee that people will refrain from retaliating against wildlife that impose economic, personal or social costs. Yet, certain beliefs and practices facilitate a level of tolerance of conflict that would be absent without those beliefs or with a different set of beliefs that instill a sense of domination over or separation from nature or irreverence for wildlife. Such a difference in cultural perspective could be the deciding factor in some specific situations, tipping the balance as to whether or not a person decides to kill a snow leopard, tiger or elephant, for example. Does the individual kill the predator just because it is out there? Or is the person only driven to such an action because the predator might kill a livestock animal? Or rather does he or she refrain from retaliation until one livestock animal has been killed? Or until many livestock have been killed? These shades of difference in action and reaction define the level of human tolerance for wildlife, a factor that can significantly contribute to the survival of endangered species in the course of the next century.

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Notes

- 1 IUCN, 1997.
- 2 McNeely and Wachtel, 1988.
- 3 Chatty and Colchester, 2002; see also, McNeely and Wachtel, 1988; Western and Wright, 1994.
- 4 Posey, 1999.
- 5 McNeely and Wachtel, 1988.
- 6 Western and Wright, 1994.
- 7 McNeely and Wachtel, 1998.
- 8 McNeely and Wachtel, 1998.
- 9 Venkataraman, 2000.
- 10 McNeely and Wachtel, 1988.
- 11 McNeely and Wachtel, 1988.
- 12 IUCN, 1997.
- 13 Igoe, 2002; IUCN, 1997; Western, 1994.
- 14 Western, 1994.
- 15 Chatty and Colchester, 2002; IUCN, 1997.
- 16 Chatty and Colchester, 2002.
- 17 IUCN, 1997.
- 18 Margolis, 1997.
- 19 Mayell, 2002.
- 20 Quammen, 2003; Saberwal *et al.*, 1994.
- 21 McNeely and Wachtel, 1998.
- 22 Along these lines Venkataraman (2000) argues that conservation planning and wildlife management in India should incorporate traditional practices of tolerance and coexistence, which have already contributed to conservation successes, a recommendation that

Les contrats sociaux traditionnels (*dina*) et le transfert de gestion des ressources naturelles renouvelable (GELOSE) — une alliance clé pour la conservation et le développement durable à Madagascar

Claudine Ramiarison et Tiana Eva Razafindrakoto

Résumé : A Madagascar, la gestion communautaire des ressources naturelles a une très longue histoire. Aujourd'hui, peut-elle encore s'avérer efficace en matière de conservation ? Les rapports traditionnels entre les communautés locales et leur environnement naturel montrent qu'elles ont bien un rôle à jouer dans la préservation des écosystèmes. Par exemple, les populations respectent, préservent et valorisent certains milieux naturels ou écosystèmes comme les terrains tabous ou les lieux sacrés. L'observation de ces règles coutumières est régie par le *dina*, un contrat social local.

La mise en œuvre de la politique de décentralisation à Madagascar a fait l'objet d'une loi sur la gestion locale des ressources naturelles dont l'application motive beaucoup les communautés locales. Forme de gestion contractuelle entre l'Etat et les communautés locales, la Gestion Locale Sécurisée permet aux communautés d'avoir des droits sur les écosystèmes dont elles sont gestionnaires. L'efficacité de la conservation dans ces sites dépend du degré de leur implication, ce qui suppose une appropriation et une adaptation aux réalités régionales et locales, fortement marquées par la culture traditionnelle. Ce transfert de gestion des ressources naturelles renouvelables et l'organisation des populations locales dans le cadre du processus de négociation avec les techniciens pour la délimitation et l'aménagement des ressources à gérer constituent des acquis importants. Les communautés ont démontré qu'elles peuvent réguler elles-mêmes la gestion et la conservation des écosystèmes et des ressources à travers des contrats sociaux enracinés dans la culture locale.

Ces contrats sociaux ne peuvent pas *garantir en soi* une gestion durable. Mais ils constituent de mesures précieuses, qui permettent d'améliorer les systèmes de conservation tout en respectant les coutumes et besoins locaux. Il est cependant nécessaire d'y associer les outils de régulation modernes, si l'on veut atteindre l'objectif fixé de mettre en place les six millions d'hectares d'aires protégées à Madagascar.

Les résultats mitigés de la gestion centralisée des ressources naturelles à Madagascar sont attribués souvent à des pratiques comme les feux de brousse et la culture sur brûlis (*tavy*), à la forte croissance démographique du pays et à la pauvreté. Par ailleurs, une insécurité foncière généralisée, le libre accès aux ressources et les faibles capacités nationales pour la valorisation économique des ressources sont aussi invoquées comme autant de facteurs d'échecs des politiques de conservation.

Suivant les mouvements mondiaux pour la conservation de la nature, liée à une prise

de conscience de la valeur de la biodiversité, et compte tenu du fort taux d'endémisme de sa faune et de sa flore, Madagascar a adopté sa stratégie nationale de la conservation de la nature en 1984, dans le but de renforcer la conservation des espèces dans les Aires Protégées. En 1995, Madagascar disposait de trois catégories d'aires protégées réparties en Parcs Nationaux, Réserves Naturelles Intégrales et, surtout, Réserves Spéciales. À l'époque, celles-ci couvraient 2% de la superficie du pays¹. Depuis, les politiques de conservation de la biodiversité ont beaucoup évolué. Dans les années 90, furent évoqués successivement la participation et l'implication des communautés riveraines dans la gestion des

aires protégées, puis l'appropriation par ces mêmes communautés des actions de conservation et de gestion durable des ressources de la biodiversité. Cette « approche participative » a connu beaucoup de tâtonnements, mais les résultats sont néanmoins restés mitigés. Plusieurs méthodes ont été déployées pour amener la participation de la population: sensibilisation, renforcements de capacité en vue d'appliquer les réglementations, d'adopter des techniques modernes, ou d'améliorer la gouvernance locale. Notamment, les Projets de Conservation et de Développement Intégré (PCDI), basés sur des principes d'intégration des populations des zones périphériques des aires protégées dans la conservation, ont développé certaines activités alternatives diminuant les pressions autour des aires protégées et différents types de processus de concertation. A l'heure actuelle, les plateformes de concertation au niveau écorégion ont pour vocation le partage des visions du développement, à partir de problématiques environnementales et de gestion des ressources naturelles, afin d'aboutir à des solutions viables et consensuelles. Mais ces actions sont parfois encore perçues comme des interdictions et des restrictions à l'usage des ressources naturelles. Force est de reconnaître que l'appropriation de ces actions de conservation par les populations est restée limitée. Pourtant, dans la politique nationale de gestion des ressources naturelles, l'objectif visé est l'appropriation des actions de conservation par les principaux concernés, à savoir les communautés locales. Comment pourraient elles adhérer à la cause et partager les mêmes valeurs et les mêmes méthodes de l'Etat ?

On a souvent tendance à oublier que les communautés locales ont leur mode de fonctionnement, basée sur des valeurs qui leur sont propres, liées à des perceptions/représentations et des relations qu'elles entretiennent avec la nature. Ces valeurs se traduisent par des règles internes. En effet, les écosystèmes et certaines

espèces peuvent être chargés de signification pour les communautés, et de croyances qui dictent leurs comportements culturels. Impliquer les communautés locales dans les



Figure 1. Un des sept lacs « sacrés » de la région de Toulear. (Courtoisie Claudine Ramiarison)

actions de conservation et de gestion durable des ressources naturelles nécessite un partage des mêmes visions, il requiert également la prise en compte des valeurs qu'elles attribuent à la nature. Il faut puiser dans les pratiques traditionnelles séculaires des sociétés, qui constituent les fondements encore actuels des sociétés rurales, les moyens d'assurer une meilleure gestion locale des ressources naturelles.

Des formes de conservation liée à la culture traditionnelle dans les relations avec la nature

Heureusement, certaines pratiques traditionnelles sont restées en usage jusqu'à main-

tenant, surtout dans les régions difficilement accessibles où le patrimoine culturel, peu influencé par l'extérieur, demeure plus ou moins intact. Dans ces régions, le respect de la nature est lié aux croyances des communautés locales, qui considèrent que certains lieux sont la résidence de forces surnaturelles et invisibles. Ainsi, par endroits, les forêts sont interdites ou *fady*, car elles appartiennent aux Dieux (Helo), comme dans la réserve forestière d'Andohahela, dans la partie sud de l'île, à Fort-Dauphin.² Ailleurs, comme dans le Parc National de Ranomafana Ifanadiana, les Tanala (Gens de la Forêt) enterrent les morts dans la forêt, loin du regard des humains,³ dans des espaces consacrés qui ne peuvent être foulés, étant donné la valeur et le respect que les Malgaches accordent aux morts et aux ancêtres.

Confrontés à une dégradation du milieu naturel, les dignitaires des pouvoirs traditionnels, encore très présents dans les sociétés rurales, peuvent influencer fortement sur le système de régulation. Dans la région forestière de la côte est de Madagascar⁴, devant la régression des surfaces boisées sous l'effet des *tavy* (défrichement et culture sur brûlis), les *tangalamena* (hauts dignitaires et notables dans les sociétés de la partie Est du pays) ont déclaré *fady* les lambeaux forestiers qui correspondent aux derniers vestiges des forêts communautaires. Ces dispositions sont suivies par les villageois.

Plusieurs forêts sont sacrées à Madagascar, ce qui est bénéfique pour la conservation des écosystèmes. On y accède selon certaines règles et les transgresser peut, selon les croyances, entraîner des sanctions, voire des malédictions. Pour preuve, il n'y a qu'à voir les rituels qui doivent être effectués, en présence des dignitaires, avant de pénétrer dans les forêts de *ramiavony*, à Mananjary, où les ethnies du Sud-Est viennent prélever le bois sacré utilisé lors des circoncisions

collectives. Les coupes de bois dans la forêt sacrée de Sakoatovo, lieu de sépulture des rois Mahafaly et de leurs descendants, dans la province de Tuléar, font également l'objet de rites convenus entre les membres de la communauté locale. Personne n'a le droit d'y pénétrer, et moins encore d'y prélever quoi que ce soit, sans autorisation préalable des gardiens de la forêt.

Ces croyances, relevant de l'identité culturelle des communautés locales, contribuent fortement à la conservation de certains écosystèmes et espèces dont elles sont voisines. Car un acte quelconque réalisé en ces lieux requiert une autorisation préalable, faute de quoi il y aurait profanation. Une valeur sacrée est attribuée à la nature, notamment à la forêt. Transgresser ces règles en abattant des arbres, en défrichant, ou en chassant dans une forêt qui appartient aux ancêtres, nécessite obligatoirement un sacrifice ou une invocation. Dans le cas de la réserve naturelle d'Andohahela, selon les pratiques et les conventions traditionnelles, l'abattage de 10 arbres, demande le sacrifice d'un poulet ou d'un



Figure 2 . Rituel fait par un ampanjaka (chef traditionnel) avant de pénétrer dans la forêt sacrée de Ramiavony – Mananjary. (Courtoisie Claudine Ramiarison)

coq. Mais si la coupe est plus importante, il faut prévoir un mouton ou un zébu.

Des tabous existent également. En forêt, il peut s'agir d'arbres au pied desquels se tiennent les rituels (*joro*), comme le nonoky (*Ficus sp.*) dans le Sud, le sakoa (*Pourpatia caffra*), ou encore les tamariniers (*Tamarindus indica*), za (*Adansonia za*) et famamy. Généralement, ces arbres sont les plus grands de la forêt. Ces mêmes notions de valeur existent également pour diverses espèces végétales et animales. Lorsqu'il s'agit de plantes médicinales, la complexité des rituels effectués par les praticiens traditionnels au moment de leur collecte dans les forêts primaires révèle la valeur et le respect qu'ils leur attribuent. Pour les animaux, les situations varient selon les régions. Cela peut être le tenrec, les caméléons, ou, dans le Sud, en Androy, la tortue (*Testudo radiata*) qui appartient aux Dieux. Leur chasse et leur consommation sont interdites.

Il est nécessaire de comprendre qu'il existe des formes de conservation traditionnelle effectuées par ces gardiens de la nature et de ses éléments. L'élaboration des schémas d'aménagement concertés doit, en effet, tenir compte du fait que ces sociétés ont déjà mis en place des règles qui relèvent de leur identité culturelle.

Les formes de « conservation communautaire » qui protègent les écosystèmes et les espèces en imposant des restrictions à l'usage de certaines ressources naturelles sont régies au sein même de ces communautés et, en cas de transgression, des sanctions sont prononcées lors de conseils coutumiers dans le cadre des conventions

traditionnelles. Les aménagements des écosystèmes effectués avec les techniciens en vue d'une gestion durable ne prennent pas toujours en considération ces représentations et ces valeurs culturelles qu'ont les communautés locales vis-à-vis de leur environnement. Il est nécessaire de comprendre qu'il existe des formes de conservation traditionnelle effectuées par ces gardiens de la nature et de ses éléments. L'élaboration des

schémas d'aménagement concertés doit, en effet, tenir compte du fait que ces sociétés ont déjà mis en place des règles qui relèvent de leur identité culturelle.

Malgré cette relation à la nature, ces croyances et pratiques ont commencé à se perdre quelque peu, notamment avec l'arrivée des migrants, la redynamisation des conventions traditionnelles régissant les sociétés rurales peut cependant bien contribuer à la conservation et au développement durable dans la politique de la gestion locale à Madagascar.

Les réglementations sociales, à travers les *dina*, pour une gestion rationnelle des écosystèmes et des ressources naturelles

Les *dina*, conventions traditionnelles entre membres d'un ou plusieurs villages d'un *fokonolona*⁵ font partie des droits coutumiers malgaches. Elles règlent le fonctionnement des sociétés en s'appliquant dans divers domaines et à différentes échelles de la vie quotidienne. Dans la société traditionnelle malgache il existe plusieurs types de *dina*, selon les besoins et les situations qui se présentent. Il peut s'agir, par exemple, d'entraide pour les travaux agricoles, des normes de sécurité, du contrôle des feux de brousse, de l'observation des interdits ou *fady*. Les *dina* sont parfois utilisés dans les cas de conflits ou lorsqu'il y a nécessité de réglementation et de discipline collectives.⁶ Ils interviennent également dans l'exploitation de certaines ressources naturelles en voie de disparition, ce qui est fréquent pour les ressources marines.

Les *dina*, conventions traditionnelles entre membres d'un ou plusieurs villages d'un *fokonolona* font partie des droits coutumiers malgaches. [...] La consécration d'un *dina* est marquée par un rituel composé de serments et d'imprécations.

Un *dina* est une réponse à une situation ou

à un problème auquel il faut trouver une solution. Les termes de l'accord et les personnes concernées, les sanctions assorties de malédiction pour les contrevenants doivent y être stipulés. La consécration d'un *dina* est marquée par un rituel composé de serments et d'imprécations. Dans le cas d'un transfert de gestion de ressources naturelles renouvelables, l'immolation de zébus est de mise et marque la ritualisation de l'action.

L'utilisation des *dina* pour la conservation est une manière de prendre en considération les communautés locales dans leur système de valeur, en faisant appel à une procédure qui leur est propre et dont elles connaissent le fonctionnement car elles en ont fixé les règles. Elles peuvent ainsi s'avérer très efficaces car elles sont enracinées dans l'appropriation locale.

Une redynamisation des pratiques traditionnelles des dina et leur intégration dans les méthodes de conservation modernes : le transfert de gestion des ressources naturelles

En 1996, une nouvelle réglementation a été mise en place à Madagascar concernant l'implication des communautés locales dans la conservation et la gestion durables des ressources naturelles. Il s'agissait de la loi

La complémentarité entre la réglementation moderne et les pratiques culturelles et sociales traditionnelles fait l'originalité de la loi GELOSE, dans laquelle le *dina* est reconnu et intégré conformément au décret n° 2000-027 du 13 janvier 2000

96 025 portant sur la Gestion Locale Sécurisée (GELOSE) et la délégation de compétence aux collectivités locales, basé sur un système contractuel entre l'Etat (représenté par le service technique gestionnaire de la ressource), les communes et les communautés locales. La complémentarité entre la réglementation moderne et les pratiques culturelles et sociales traditionnelles

fait l'originalité de la loi GELOSE, dans laquelle le *dina* est reconnu et intégré conformément au décret n° 2000-027 du 13 janvier 2000. Dans ce cadre, il y a une répartition des responsabilités entre les parties prenantes du contrat. Pour leur part, les communautés locales utilisent le *dina* pour régler les rapports internes des communautés villageoises au sujet des espaces et des ressources naturelles. Au préalable, les terroirs sont délimités et des schémas d'aménagement élaborés en concertation avec toutes les parties prenantes.

Le transfert de gestion GELOSE se fait à l'initiative des communautés locales qui en font la demande auprès des services techniques, gestionnaires publics d'une ressource. Il est soumis à des règles, fixées conjointement entre le service forestier et la commune et définies par un cahier des charges. Pour atteindre les objectifs convenus avec

les deux autres parties, les communautés locales assument leur pouvoir de contrôle, de surveillance, et de droit de prélèvement à travers les *dina*. Aujourd'hui, ce type de transfert de gestion n'a que quelques années d'existence, mais il est fortement demandé par les communautés locales sur toute l'île pour défendre leurs droits, affirmer leur identité et leur droit d'usage sur des terroirs que leur ont légués leurs ancêtres. Si, au départ, les transferts de gestion ont surtout porté sur les écosystèmes forestiers, de plus en plus les communautés locales se proposent pour gérer les ressources marines, les espaces côtiers, les lacs et les terrains de parcours. Ainsi, dans la négociation des plans d'aménagement, la conservation se retrouve souvent au même niveau que le développement.

Le transfert de gestion GELOSE se fait à l'initiative des communautés locales [...] qui assument leur pouvoir de contrôle, de surveillance, et de droit de prélèvement à travers les *dina*.

Pour l'implication des communautés locales dans les actions de conservation-développe-



Figure 3 . Immolation d'un zébu lors d'un transfert de gestion de ressources naturelles. (Courtoisie Claudine Ramiarison)

ment, il est fondamental de prendre en considération les valeurs qu'elles attribuent à l'environnement et de voir de manière concertée des solutions viables. Par expérience, le recours aux *dina* montre que des éléments importants et convergents contribuent à la conservation et la gestion durable des ressources naturelles.

Les pratiques des *dina* dans la gestion et la conservation de la biodiversité des récifs coralliens de Nosy Ve

En 1998, dans le but de préserver et de gérer de manière rationnelle les ressources marines et côtières de Nosy Ve, un îlot sacré de 1 400 m sur 400 entouré d'un récif corallien annulaire et situé au Sud de l'île de Madagascar,⁷ une gestion communautaire a été initiée par les 6 villages de pêcheurs *vezo* possédant des usages coutumiers sur le site. Régie par un *dina*, cette gestion communautaire a eu pour origine la diminution progressive du rendement de la pêche et les conflits générés entre les différents usagers, pêcheurs artisanaux, opérateurs de pêche et touristique. Un plan d'aménagement a été alors défini en concertation avec les membres de la communauté de pêcheurs et les techniciens des services halieutiques et marins. La mesure était accompagnée

d'un plan d'action de conservation et de développement centré sur quelques activités essentielles. Pour la mise en œuvre du plan d'aménagement, un *dina* a été conclu dans le but de régler l'accès à la zone et l'exploitation des ressources. Le zonage prévoit

le développement de l'écotourisme communautaire dans une partie du récif annulaire surnommée « l'aquarium », mais aussi le renouvellement des stocks de la faune et de la flore. Le plan d'action prévoit aussi le reboisement de l'îlot. D'autres dispositions concernent la surveillance et la formation des guides touristiques villageois.

Le *dina* fixe des règles strictes pour la gestion durable des ressources marines : interdiction des pratiques destructrices des récifs coralliens, interdiction de capturer les espèces protégées désignées par le *dina*, de mouiller la nuit aux alentours de Nosy Ve sans autorisation spéciale, d'y camper et d'y prélever tout organisme, d'apporter sur l'îlot des denrées contenant de la viande de porc, etc. Le non respect de l'une des clauses du *dina* est passible d'amendes versées à la communauté locale, constituée légalement en association. Cependant, si le *dina* peut être efficace au niveau de l'association, les communautés locales ne sont pas toujours à l'abri de l'arrivée de migrants, qui ne s'estiment pas concernés par la réglementation interne

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locale, et des conflits avec des personnes extérieures ou des opérateurs sont effectivement survenus. L'association a donc demandé à l'administration chargée de la pêche et des ressources halieutiques et marines d'effectuer un transfert de gestion, conformément à la loi GELOSE, afin de protéger leurs acquis en terme de gestion durable. Des cas similaires se sont produits à différents endroits, comme sur les lacs d'Antsalova-Bemaraha et ceux d'Antsirabe, subissant l'afflux saisonnier de pêcheurs venus d'ailleurs. Il est aussi intéressant de noter que ces « stratégies de protection » contre les migrants peuvent aussi cacher des intérêts personnels. Dans le Sud-Ouest, les *mpanarivo* (notables villageois propriétaires de grands troupeaux) défendent des espaces forestiers des défrichements commis par des migrants, mais aussi des autochtones, dans le seul but de se les réserver comme pâturages.⁸

Les conventions sociales traditionnelles, même légitimes, ont leurs limites et ne permettent pas de régler tous les problèmes. Toutefois ce moyen, utilisé pour la conservation et la gestion durables des ressources naturelles à Madagascar, peut contribuer à relever les défis actuels lancés au niveau international pour l'accroissement des espaces protégés auquel nous nous sommes tous engagés, tant au Sommet Mondial sur le Développement Durable de Johannesburg, en 2002, qu'au Congrès Mondial sur les Aires Protégées de Durban, l'année suivante. Plusieurs pays se sont fixés des objectifs similaires, et le Madagascar s'est engagé à tripler la superficie de ces Aires protégées, avec la contribution de communautés locales responsables.

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Notes

- 1 ANGAP et ONE, 1995.
- 2 Razanabahiny, 1995.
- 3 Ramiarison, 1995.
- 4 Maldidier, 2000.
- 5 Selon la Loi n° 96 025 portant sur la Gestion Locale Sécurisée (GELOSE) : le *fokonolona* est le nom donné à une ou plusieurs communautés de personnes vivant dans une portion de territoire national appelée *fokontany*. Le *fokonolona* est doté de la personnalité morale (Art. 1°). Le *fokonolona* est responsable de son *fokontany*. Il gère son patrimoine. (Art. 7.). Sous réserve des dispositions législatives contraires, le *fokonolona* règle l'administration et l'exploitation des terres qu'il a mis en valeur. (Art. 10.).
- 6 Les mêmes pratiques se retrouvent en Afrique continentale dans les forums de régulation de l'accès aux ressources et pour le règlement des conflits de nature foncière (Le Roy, Karsenty et Bertrand, 1995).
- 7 Razafindrainibe H. et H. Rakotoarison, « Gestion communautaire, conservation et développement : le cas de Nosy Ve », communication à l'Académie Malgache, 2002
- 8 Maldidier, 2000.

Culte des ancêtres joro et sauvegarde des espèces menacées d'extinction à Madagascar

Lala Jean Rakotoniaïna et Joanna Durbín

Madagascar, grande île de l'Ouest de l'Océan Indien, est caractérisée par son taux élevé de l'endémisme de sa biodiversité: 100% chez les primates (lémuriens), 93% chez les reptiles, 52% chez les oiseaux et 85% pour les espèces végétales identifiées. L'hypothèse de son peuplement présume que les ancêtres des Malgaches ont colonisé progressivement l'île depuis 2500 ans. Leurs différentes origines asiatique, malayo-poly-nésienne, africaine et européenne expliquent la diversité de leurs cultures.¹ Le rôle fondamental que peuvent jouer le culte traditionnel et les tabous pour la conservation sera illustré ici par deux exemples, à propos du Parc National de la Baie de Baly au nord-ouest de l'île, et du Lac Alaotra, à 250 km au nord-est de la capitale Antananarivo.

Le culte traditionnel *joro* et sa « mise en valeur » par un projet environnemental

Le *joro* ou *soro*, est la désignation générique des cultes comportant une offrande et un sacrifice.² Il s'agit d'un culte ancestral, pratique traditionnelle unique de tous les Malgaches, qui explicite les liens entre la nature, l'homme et la culture. Il est fondé sur la prière au *ndranahary* (créateur) et aux *zanahary*³ (esprits des ancêtres) pour bénir une personne, une communauté ou une action. Le *joro*, de forme différente selon les régions, exprime un même fond invariant de ralliement et de réconciliation. Les pratiques du *joro* dégagent la culture traditionnelle malgache mouvant une croyance née à partir de la nature et conçue pour entretenir la nature. Le *joro* conceptualise le lien entre le *créateur/esprit* (au sommet), la *nature* (au centre) et les

ancêtres/êtres humains (à la base). Ainsi, le réveil de la conscience environnementale malgache, ancrée dans le fond de son être (culte et croyance) peut aider dans la responsabilisation des communautés villageoises à des buts de conservation.

Pour bien comprendre la communauté villageoise, il est nécessaire de s'y intégrer pour vivre cette culture donnant la priorité à la nature, garant de sa subsistance. Nos expériences nous nous démontrent qu'il appartient aux spécialistes de la conservation d'explorer, dans le *joro*, l'utilité de la trilogie « créateur/esprit – nature – ancêtres/êtres humains » pour comprendre la communauté villageoise. Dans cette logique, « sauvegarder la nature » signifie « préserver les ancêtres ». ⁴ La prière durant le *joro*, les contes, les légendes, les proverbes, décrivent cette ascendance spirituelle⁵ et définissent l'être humain en fonction de l'esprit.⁶ Tout vient du créateur qui possède un esprit matérialisé par la lumière, origine de toutes les créatures dont le soleil (mâle) et la terre (femelle), époux et épouse,⁷ sont à l'origine de la nature vivante. L'être humain, conçu avec un esprit, en est le dernier-né. Après sa mort, l'être humain remet sa vie (sang et eau) et son corps (chair et os) à la terre mère. Son esprit (lumière) revient au soleil père, devenu esprit ancestral, intermédiaire des vivants au créateur. Ainsi on pourrait soutenir que, pour préserver la nature, la culture traditionnelle l'humanise dans le culte ancestral. Ou peut-être, plus que d'humanisation de la nature il s'agit ici d'entretenir un des moyens par lequel le vivant

...le culte *joro* serait un lieu de régulation de la nature— une considération essentielle aussi dans les préoccupations écologiques «modernes»

entre en bonne relation avec les esprits de la nature. Dans cette perspective le culte *joro* serait un lieu de régulation de la nature. Cette considération est aussi essentielle dans les préoccupations écologiques «



Figure 1. Réunion villageoise nocturne à Kasany (Baie de Baly, Nord-Ouest de Madagascar) durant la fête de la tortue à soc. (Courtoisie Lala Jean Rakotoniaina)

modernes ». L'approche de « conservation communautaire » du Durrell Wildlife Conservation Trust (Madagascar)⁸ valorise le lien entre ces valeurs culturelles et la sauvegarde de la biodiversité. Voilà quelques exemples de cette mise en valeur qui lie la conservation et la culture à travers le culte de *joro*.

Le joro et la conservation de la tortue

La tortue à soc (*Geochelone yniphora*) est menacée d'extinction et ne se trouve qu'autour de la Baie de Baly, au nord-ouest de Madagascar. Le *joro doany* (culte ancestral dans la case sacrée royale avec sacrifice de zébu) du hameau de Maroleo, qui s'est tenu le lundi de Pâques de l'année 1995 dans la région de la Baie de Baly, illustre ce concept culturel pour la conservation de la nature. Le prêtre traditionnel, possédé par le *tromba* (esprit du roi défunt), menait la cérémonie. Il priait le créateur de bénir l'assistance et dictait de nouvelles ordonnances. Il y évoquait les ascendants humains : le créateur

donnant la lumière, l'ancêtre d'en haut (le soleil) et l'ancêtre d'en bas (la terre), toute la nature, origine de la vie humaine, et les principaux ancêtres humains (les rois des anciennes royautes *sakalava* de l'ouest de Madagascar puis les chefs de clans de la zone). Cela renforçait l'objet du *joro* formulé par le conseil des sages de la zone et nous mêmes, en tant que spécialistes de la conservation, avons appelé et détaillé l'urgence de la préservation de la forêt restante dans la région et de la sauvegarde de la biodiversité qu'elle héberge. Nous avons expliqué que cela peut se faire par la population locale avec la collaboration de l'administration et le partenariat des bienfaiteurs environnementaux. Le prêtre ordonna à la population locale de respecter les tabous, de bien collaborer avec les Eaux et Forêts et d'aider l'équipe Projet Angonoka (nom local de la tortue à soc ou tortue à éperon) à mener à bien ces objectifs de conservation.

Le *joro doany* qu'on vient de décrire a été organisé par dix villages riverains d'Antsokotsoko-Anjaha (région de Baie de Baly, Nord-Ouest de Madagascar), site naturel de la tortue. Il a pu rassembler jusqu'à trois cents personnes (hommes, femmes et enfants). Des chercheurs et des chefs de service de la sous-préfecture de Soalala y ont participé. Après la cérémonie culturelle, tout le monde a assisté à l'assemblée plénière, organisée sous un vieux tamarinier, place publique du village. Les hommes s'y sont groupés en rond sur des nattes, les dirigeants traditionnels et officiels au pied du grand arbre au nord, les jeunes gens à l'est, derrière eux les femmes et les enfants, à côté, accroupis au sud-ouest. La cuisson du repas communautaire s'est faite près de tout cela par une dizaine de femmes pour le riz et par cinq jeunes gens pour la viande du zébu du *joro* dans une grande marmite. De là, tout le monde a pu suivre la discussion. Les villageois qui participaient à la réunion ont profité de la présence des autorités sous-préfectorales et communales pour discuter leurs divers problèmes locaux. Le sujet

de la réunion ne pouvait pas être abordé sans avoir consacré du temps à la résolution de ces problèmes.

L'organisation des réunions publiques villageoises respecte l'ordre traditionnel spatial, temporel et social, retrouvé durant le *joro*. L'animateur doit partager la parole, une fois libre, à chacun de différents groupes sociaux participant à l'assemblée plénière. Ainsi, tout le monde peut prendre la parole dans ces réunions, après les formules de politesse du discours classique des chefs lignagers. A Maroleo, le chef de cantonnement des Eaux et Forêt a présidé la séance. Les auteurs de cet article ont assuré l'animation. Les notables villageois ont orienté la discussion selon les directives du *joro*. Les invités officiels ont expliqué les mesures techniques, administratives et légales. Des jeunes et des femmes ont donné leurs avis. Trois décisions furent finalement prises :

- demander à l'Etat de classer les forêts primaires sèches de la région de Baie de Baly en « réserve » ;
- y faire aménager des pare-feux par les villages riverains utilisant des pratiques traditionnelles de feux de contre-saison ; et
- organiser un concours environnemental entre les dix communautés locales utilisatrices des forêts.

En 1997, trois ans après cette cérémonie, le Parc National de la Baie de Baly a vu le jour, s'étendant sur quelques 57,418 ha. Les pare-feux avait déjà été réalisés trois mois après la cérémonie. Le concours environnemental a été lancé durant toute l'année suivante entre ces dix villages avec cinq critères : réalisation de pare-feux, maîtrise de feux sauvages, reboisement individuel ou collectif, nombre de permis de coupe offerts, taux de participation aux actions collectives. Ce concours est évalué par une équipe composée du chef de cantonnement des Eaux et Forêts, d'un agent de l'ONG environnementale régionale et de deux villageois désignés

par la communauté. Le prix communautaire a été discuté en assemblée générale villageoise. Par exemple, le prix du village d'Antranolava, utilisateur du site de Sada, fut un puits. En contrepartie, tous les ans, le village s'est engagé à entretenir les pare-feux. En effet, aux moindres incidents (par exemple incendies en 1996, 1998, 2000 ; tentatives de prélèvement pour trafic de tortue à soc en 2002, 2004) le village porte secours au parc. En plus, les chercheurs sur cette espèce chélonienne sont bien recueillis et intégrés dans les communautés villageoises de la zone.



Figure 2. Le *tromba*— prêtre traditionnel possédé par l'esprit du dernier roi de Baly— préside le culte ancestral (*joro*) pour la conservation de la tortue à soc et de son site naturel à Karananjy (Baie de Baly, Nord-Ouest de Madagascar). (Courtoisie Joanna Durbin).

Le joro et la conservation des zones humides

Le lac Alaotra, couvrant 20,000 ha au centre-est de Madagascar, est le plus grand de l'île et abrite encore deux espèces d'oiseaux menacées, le Grèbe de Alaotra (*Tachybaptus rufolavatus*) et le Fuligule de Madagascar (*Aythya innotata*). Le déboisement de son bassin versant et les fortes pressions agricoles (riziculture) ont fortement dégradé le bassin versant et la survie même du lac est menacée par comblement. Les pêcheurs, majoritaires dans la population riveraine, dépendent du lac et des marais. La production des poissons surexploités pendant plus de vingt ans décroît en quantité et en qualité. Le *joro* nous a offert aussi ici un fondement culturel à des diverses actions en

faveur de la nature.

De 1996 à 2003, pour redresser la situation critique du lac, nous avons travaillé avec les communautés riveraines du lac et les autorités locales des 71 villages, 133 écoles, 28 communes et deux sous-préfectures pour organiser des concours d'animations par des fêtes (folklore villageois, théâtres scolaires) ; des ateliers villageois ou pédagogiques au niveau local, communautaire ou régional ; la création d'associations statutaires ou des groupements villageois ; des actions environnementales ou de développement liées à la conservation et un suivi écologique. Chaque région a sa propre culture qui correspond à un milieu naturel spécifique. Le plus simple en est le *joro toaka* (culte ancestral avec boisson alcoolique), réalisable partout et n'importe quand. Nous avons souvent promu le *joro toaka* à propos de la conservation des marais et de leur biodiversité, et cela a ritualisé des initiatives socio-économiques et écologiques.

Devant la détermination de la population locale pour la conservation des marais, nous

Nous avons souvent promu le *joro toaka* à propos de la conservation des marais et de leur biodiversité, et cela a ritualisé des initiatives socio-économiques et écologiques.

avons pu trouver un financement pour plus d'une centaine de microprojets communautaires villageois ou scolaires entre 1997 et 2001 axés sur la lutte contre la pauvreté rurale. La répartition de cette aide financière s'est faite par concours d'actions environnementales organisées entre une dizaine de villages ou d'écoles par an. Les prix ont varié de

100% du financement du projet choisi pour le premier à 25% pour le dernier. Le premier prix a été un puits et le dernier une grande marmite. Il est intéressant de remarquer que, souvent, la valeur d'usage culturel y est venue avant la valeur commerciale. Une grande marmite pour le repas communautaire entretenant la cohésion sociale a autant de valeur qu'un puits utile pour tout

le village.

Le dernier concours annuel de suivi écologique (2000-2003), dans 16 sites clés autour du Lac Alaotra a démontré le succès des efforts: le brûlis des marais s'est réduit ; le braconnage des lémuriens des marais est maîtrisé ; la production des poissons augmente chaque année ; le confort matériel des pêcheurs vivant dans des pailloles, cases en papyrus, s'améliore, et certains arrivent à construire des maisons en briques cuites ; dix communautés villageoises riveraines du lac ont obtenu un transfert officiel de gestion des marais ; le groupement de pêcheurs de chaque village arrive à appliquer sa



convention locale de gestion de la pêche ; depuis 1999, le Service

Figure 3. Culte ancestral (*joro*) pour la conservation des marais et de la vie aquatique du lac Alaotra (Courtoisie Lala Jean Rakotoniaina).

Haliéutique parvient à maintenir la fermeture saisonnière de la pêche selon la convention régionale (*dina*), ce qui a été impossible en 1997 ; le zonage (lac, marais, rizières, basins versants) de ce site Ramsar pour son futur plan de gestion est concerté au niveau régional ; les associations environnementales s'organisent en unions intercommunales, en tant que sociétés civiles ; les radios locales font des émissions périodiques sur la conservation des marais et du lac ; la sensibilisation permanente sur la conservation des marais engagée depuis 1996 y est reprise et renforcée par les dis-

cours du Président de la République visitant la région depuis 2001. En couronnement de tout cela, en 2003 le lac et son bassin versant, au total 722,000 ha, ont été classés en tant que troisième site Ramsar de Madagascar.

Pour concrétiser la sauvegarde du hapalémur d'Alaotra—*Hapalemur griseus alaotrensis*, un lémurien vivant dans les marais et endémique au Lac Alaotra—le Projet Alaotra a été mis en place pour intégrer la conservation et la lutte contre la pauvreté rurale. Ses objectifs visent la gestion rationnelle des ressources naturelles des zones humides d'Alaotra et le maintien des conditions écologiques pour la bonne productivité de la région et la survie de sa biodiversité. Pour mener à bien sa réalisation, une équipe consensuelle constituée de sept personnes comprend : un coordinateur du projet, deux responsables de cellules environnementales de circonscriptions scolaires, deux agents du service forestier et deux de l'halieutique. Elle choisit les villages à sensibiliser, encadre leurs ateliers d'organisation, supervise leurs réalisations collectives liées à la conservation et fait intervenir même la répression, secours demandé par les associations contre des délinquants (braconniers, brûleurs de marais, pêcheurs durant la période de fermeture).

Culte traditionnel *joro* et actions de conservation.

A Madagascar, 75% de la population vit dans le monde rural⁹ et la communauté villageoise malgache dépend de la nature, des forêts et des zones humides pour leur subsistance (pêche, chasse, cueillette, riziculture et élevage de zébu).

Traditionnellement, elle est gérée par le consensus du conseil de dirigeants de segments de lignages, prêtres du *joro*. Le Malgache rural vit dans un environnement naturel dominé par la tradition. Il est souvent beaucoup plus ému par le culturel que par le matériel. L'élevage du zébu, dit «

sentimental »¹⁰, prévoit davantage l'utilité culturelle (enterrement, exhumation, *joro*) que la nécessité économique. Dans la tradition malgache, les *fady* « tabous » et les *dina* « conventions locales »¹¹ réglementent l'accès humain à la nature, mère nourricière, en relation avec le *joro*. La pêche traditionnelle en fournit quelques exemples. Le filet était tabou pour les lacs. La saison taboue correspondait à la période de ponte des poissons, son ouverture nécessitait un *joro omby* (culte ancestral avec sacrifice de zébu) au commencement de la saison sèche. En fonction de la gravité de l'infraction, le délinquant transgressant les *fady* et les *dina* était puni par des amendes allant du simple avertissement verbal jusqu'à son expulsion hors de la communauté. Pour se purifier, il devait faire un *joro omby* avec un repas communautaire servant la viande.

La plupart de ces pratiques sociales traditionnelles sont encore vécues dans le monde rural à Madagascar et restent conformes aux exigences de la conservation. D'autre part, leur mise en valeur pour la conservation de la biodiversité nécessite parfois une « actualisation », spécialement s'il s'agit d'appliquer des lois étatiques. La conservation communautaire s'inspirant des valeurs ancestrales obtient l'adhésion volon-



Figure 4. Culte ancestral (*joro toaka*, utilisant la boisson alcoolique) pour la conservation du lémurien des marais et du site naturel lacustre d'Alaotra (Centre-Est de Madagascar.) (Courtoisie Lala Jean Rakotoniaina)

taire des villageois. Si la conservation « étatique » veut promouvoir des visions, des normes, des techniques et des comportements extérieurs à ces valeurs, il faudra d'abord instaurer un dialogue pour établir des liens entre le « culturel » et le « social ». Dans d'autres mots, plusieurs communautés supportent sans critique le poids d'un tabou et de la convention locale (le culturel) qui leur semble naturel, mais suivre une loi (le social) leur paraît difficile. Ainsi, pour faciliter le respect de la législation en vigueur, les associations villageoises ont besoin de formuler, par leurs membres et pour leurs membres, des *dina*— mesures locales d'application de ces lois.

Nous avons trouvé que le *joro* favorise la sensibilisation et l'organisation de masse pour des actions environnementales. Sa préparation permet aux villageois de concevoir eux-mêmes et de réaliser ensemble des projets liant la culture, l'environnement et l'économie. Ces projets sont « comme la forêt » qui à la fois conserve les tombeaux, cache les zébus, héberge la biodiversité et retient l'eau pour les rizières ou « comme les marais », qui fournissent des plantes médicinales, des matières premières pour l'artisanat féminin et la construction des cases, régularisent l'eau du lac, et donnent aux poissons des refuges pour s'y nourrir, s'y engraisser et s'y reproduire. La cohésion des membres d'une communauté villageoise ritualisée par le *joro* est entretenue par des fêtes traditionnelles, des repas communautaires, des réunions villageoises sur la place publique, de leur union dans des associations organisées pour des travaux collectifs, sociaux, économiques ou environnementaux. Le *joro* est, avant tout, une négociation collective avec les esprits ancestraux et de la nature, mais il offre aussi une occasion d'entretenir des importants liens sociaux (réunions de la communauté, discussion d'initiatives communes, ritualisation des décisions, etc.).

Il y a, aussi, d'autre part, une certaine

valeur politique dans le *joro*. Le terroir ancestral matérialisait l'ensemble de la nature nécessaire pour la subsistance de la communauté villageoise et conservait toutes les valeurs culturelles et sociales traditionnelles. Devenu terre royale à l'époque monarchique (1500-1896) et propriété domaniale depuis l'ère coloniale (1896-1960), il a ainsi changé de détenteur (le roi puis l'Etat) et de statut et donc a perdu toutes ses valeurs communautaires antérieures. Seule la pratique du *joro* il y a persisté. Dépossédée, la communauté est restée simple utilisatrice des ressources naturelles (des terres, des forêts, des marais et des lacs). Le villageois doit payer un permis du droit d'usage pour les ressources forestières et de l'impôt pour la terre. La contestation passive des autochtones contre ce changement du « statut foncier » s'est souvent exprimée par des feux de brousse, d'auteurs inconnus, qualifiées de « feux sauvages ». Ces feux sauvages dévastent, à chaque saison sèche, les savanes, les forêts et l'environnement rural. Au nom de la cohésion sociale, même au prix d'amendes collectives, personne n'ose les dénoncer. Le changement historique du statut foncier a désengagé la communauté villageoise de la responsabilité envers cet espace villageois et même envers la nature qu'il renferme.

Le joro offre une occasion d'entretenir des importants liens sociaux (réunions de la communauté, discussion d'initiatives communes, ritualisation des décisions, etc.).

Pour éviter la continuation de ces dégâts, la conservation communautaire peut apporter une réconciliation. Elle se base sur le transfert de gestion des ressources naturelles venant de l'état vers la communauté villageoise. Un contrat écrit entre ces deux parties définit les clauses à respecter par l'un et par l'autre. La communauté, utilisatrice des ressources naturelles d'un site, en devient gestionnaire. L'état, qui reste détenteur de la propriété domaniale, supervise cette gestion selon la loi. L'administration, les techniciens et les ONG peuvent porter un appui.

Et le transfert de cette gestion peut être ritualisé par le *joro*. Nous avons travaillé avec cette approche de conservation communautaire selon plusieurs étapes:

- sensibilisation de la communauté villageoise sur l'urgence de la conservation par des pratiques rituelles liées à l'environnement (*joro*);
- conscientisation de ses membres dynamiques afin qu'ils prennent des responsabilités;
- organisation en associations statutaires dans des ateliers villageois;
- formalisation des accords en *dina* (conventions locales) pour la gestion durable des ressources naturelles sur lesquelles la communauté veut prendre la responsabilité de gestion; et enfin
- passage du temps pour que les communautés se prennent en charge pour valoriser leur culture et assurer leur subsistance.

Depuis les deux dernières décennies, la conscience environnementale malgache a resurgi avec le mouvement écologique mondial et la sauvegarde de la biodiversité *in situ* par les communautés villageoises, gestionnaires des ressources naturelles selon à la fois leurs lois coutumières et modernes. Le *joro*, un instrument culturel traditionnel, raffermi les liens spirituels unissant les membres d'une communauté villageoise à leur terroir et la capacité de la communauté d'achever des tâches collectives. Il joue ainsi un rôle important et très positif dans les initiatives de conservation.

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Notes

- 1 Jenkins, 1990.
- 2 Dina, 2001 ; Rakotomalala *et al.*, 2001.
- 3 Munthe, 1982. PAGE : 1
Les *zanahary* sont souvent pris dans la catégorie des esprits royaux et princiers. À souligner que le « dieu créateur » est également nommé *zanahary* en fonction des régions.
- 4 Durbin, *et al.*, 2003.
- 5 Dahl-Otto, 1968; Beaujard, 1991.
- 6 Estrade, 1997.
- 7 Dahl-Otto, 1968.
- 8 Durbin, *et al.*, 2003 ; Hackel, 1999.
- 9 Banque Mondiale, 2003.
- 10 Jenkins, 1990.
- 11 Durbin, *et al.*, 2003

Conservation and the “two cultures”—bridging the gap

Luisa Maffi

Abstract: This paper reviews some of the controversial history of and current debates on the relationship between conservation and culture. It points to the persisting gap between the natural and social sciences in this domain and to the challenges that are left unmet by this gap. The paper offers some reflections about how to overcome the gap, by proposing a more integrative notion of “conservation” and outlining the main features of the emerging field of biocultural diversity, in both research and practice. It concludes with a call for action for those involved or interested in conservation work from a biocultural perspective.

Historically, the nexus between the concepts of “conservation” and “culture” has been a complex and problematic one, in both theory and practice. Conservationists have often balked at the idea of ecosystems as “humans-in” systems, that is, systems that have been shaped over time not just by “natural” evolutionary processes, but also by humans’ cultural interactions with their surrounds.¹ That perspective introduces inherent, multi-faceted complexities that conservationists have tended to be reluctant to engage with. It has been common for conservationists to seek to define and analyze ecosystems and ecosystem processes independent of human presence, or to seek to extrapolate from present conditions of ecosystems to conditions prior to human presence and significant interaction with the environment (what could be defined as a “humans-out” approach). Such idealised conditions have been used as benchmarks for the development of conservation visions and for measuring success in reaching conservation targets. In terms of humans’ relationships with nature, conservationists have frequently preferred to point at the negative side of the picture— that is, human-made environmental degradation, and the perceived failure of “sustainable development” schemes; and these views have also affected thinking in relation to parks and protected areas.²

Conversely, anthropologists and social-science-oriented researchers have stressed precisely the cultural nature of the interactions between humans and the environment, the vast diversity of these interactions, and the ways in which they are reflected in and supported by local languages, traditional knowledge, and cultural and spiritual values.³ Research in this domain has explored numerous instances in which these interactions, maintained over long periods of time, have not been destructive— on the contrary, they appeared to sustain biological diversity, while modifying the environment in often subtle ways not unlike “natural” processes.⁴ It has examined the role of humans as biodiversity-enhancing “agents of creative ecological disturbance”⁵ and highlighted the mutual links between the vitality, productivity and resilience of ecosystems and those of human communities.⁶ Critiques of the “humans-out” approach to conservation have been common in this body of literature.⁷

Over the past two decades a significant disconnect has become apparent between biological and socio-cultural approaches to conservation... somewhat reminiscent of the gap that C.P. Snow famously identified between the “two cultures” of science and the arts

Culture and conservation: ongoing debates, unmet challenges

Except for a few inherently integrative fields

such as ethnobiology, traditional ecological knowledge, and ecosystem health, so far the natural and social sciences have by and large failed to engage in a truly in-depth and constructive dialogue around conservation issues— a dialogue that would be conducive to the development of a common language and a common ground for both research and action. More typical are debates such as the one that flared up recently on the pages of *Conservation Biology*.⁸ Another significant example is a symposium organised by anthropologists at the 2002 annual meeting of the Society for Conservation Biology. Although the symposium was titled “Integrating People and Conservation— Interdisciplinary Approaches”, most of the presenters were from the social and environmental sciences, with no “hard core” conservation biologists involved.

Indeed, over the past two decades a significant disconnect has become apparent between biological and socio-cultural approaches to conservation, a disconnect that is somewhat reminiscent of the gap that C.P. Snow famously identified between the “two cultures” of science and the arts.⁹ At one end, social scientists have critiqued conservationists for seeing “pristine environments” and “wildernesses” where in reality they were confronted with cultural landscapes.¹⁰ At the other end, conservationists have portrayed social scientists as starry-eyed adepts of the myth of the “ecologically noble savage” living in idealised balance with nature.¹¹

In the midst of such debates, indigenous peoples, minorities, and other local communities dwelling in areas of significance for conservation have often been confronted with unsavoury prospects. In many cases, they faced restriction in the use of natural resources and even forcible exclusion from their lands under charges of being destructive interlopers— thus losing their vital

material, cultural, and spiritual links with the environment.¹² But nearly as detrimental to them may be being hailed as “stewards of nature” with the attached misconstrued expectations that they should behave like frozen museum specimens— thus compromising their right and ability to adapt and develop in response to changing circumstances.¹³ This is certainly not to say that examples of indigenous peoples and conservationists working together for the conservation of biodiversity and protected areas are lacking.¹⁴ Yet, when indigenous and minority groups have adopted the language of stewardship in an effort to defend themselves from exclusionary practices, they have sometimes been charged with engaging in “ecopolitics” and “strategic essentialism”.¹⁵

Meanwhile, many governments around the world have continued to turn blind eyes and deaf ears onto matters of environmental as well as cultural protection. Industrialists and developers have kept promoting unsustainable practices of land and resource use, predicated on the growing dominance of societal models of affluence and over-consumption. And international organisations and NGOs have been striving to uphold the ideals of sustainable development formulated in the early 1990s— the quest for balance among the three “pillars” of environment, society, and economy and the concern for fulfilling the needs of present generations without compromising the prospects of generations to come. Mounting global pressure, however, has taken aim at the sustainable development agenda and shaken its foundations. From resting evenly on the three “pillars”,

Converging with the ecological extinction crisis, the planet has been experiencing a severe erosion of the diversity of human cultures and languages, reducing the pool of knowledge, behaviors, and values from which individual communities and humanity at large can draw to respond to social and environmental stresses

that agenda has been pushed toward perilously balancing on only one, economy—yielding to top-down, short-term, unsustainable “development as usual”.¹⁶

The ravaging of ecosystems and their life-giving functions has thus continued steadily.¹⁷ Converging with the ecological extinction crisis, the planet has been experiencing a severe erosion of the diversity of human cultures and languages, reducing the pool of knowledge, behaviours and values from which individual communities and humanity at large can draw to respond to social and environmental stresses.¹⁸ The loss of “vital signs” at the level of ecosystems negatively affects the vitality of human communities (and vice versa), in a downward spiral of dysfunction and distress.¹⁹

Preservation, conservation, and beyond

Closing the existing gap between the “two cultures” of the natural and social sciences on issues of conservation is far more than a matter of semantics. Nevertheless, it may be useful to take a look at how the concept of “conservation” is commonly interpreted and to consider some alternative interpretations. Often, “conservation” is understood as (and appears indistinguishable in its practice from) “preservation”.

That is, it is thought of as referring to something that needs to be carefully set aside and subjected to special treatment for only limited, controlled future use. Whether applied to nature or culture, this preservationist approach tends to elicit strong reactions in the people affected by its application. Witness the following vivid example, presented from a Tlingit (Canadian First Nations) perspective: “Preservation [...] is what we do to berries in jam jars and

From a Tlingit (Canadian First Nations) perspective: “Preservation [...] is what we do to berries in jam jars and salmon in cans.”



Figure 1. “Preserving” languages. (Courtesy © Robert L. Humphrey. Previously published in *AnthroNotes* 23(2), Fall 2002, p. 13.)

salmon in cans.”²⁰

However, conservation does not have to mean putting either humans or the environment in “jars” or “cans”. As Aldo Leopold, an early pioneer of the environmental movement, put it, conservation is about how to humanly occupy the land without rendering it dysfunctional for future generations. The way Leopold saw it, conservation is “a positive exercise of skill and insight, not merely a negative exercise of abstinence or caution”.²¹ Leopold “insisted that conservation means *more* than simply preserving what has not yet been spoiled; it means reversing the history of abuse, using ecological principles to harness nature’s own powers of recovery.”²²

Adopting and extending this definition of conservation might help bridge the gap

between the “two cultures” of conservationists and social scientists concerning environmental issues. On the one hand, Leopold’s concern for ensuring that the land is *both* used *and* not rendered dysfunctional for future generations, as well as his focus on an active infusion of “skill and insight” rather than mere negative “abstinence and caution”, provide a perspective that is germane to the original ideals of sustainable development. This perspective also seems more in tune with indigenous notions of relationships with the environment than the “berries-in-jars-and-salmon-in-cans” preservationism. In particular, it resonates with certain indigenous concepts and values, such as the Native American and First Nation principle that the actions of present generations must take into account the consequences for seven generations to come.

The way Leopold saw it, conservation is “a positive exercise of skill and insight, not merely a negative exercise of abstinence or caution”

On the other hand, for present purposes it might be fruitful to extend Leopold’s active, humans-in approach to conservation beyond its original intended scope, to holistically encompass the maintenance and restoration of cultural traditions and languages. This would lead to recognizing both the diversity of ecological knowledge that could be used to “harness nature’s own powers of recovery”, and the importance (for conservation as well as for human rights!) of “reversing the history of abuse” that has affected not only the world’s ecosystems, but also the world’s indigenous and minority peoples and other local communities in relation to access to and use of their lands and territories.

Biocultural diversity: an emerging synthesis

Such a holistic approach is enshrined in the emerging field of biocultural diversity.²³ This perspective, which has some of its antecedents in international documents

such as IUCN’s *Caring for the Earth*²⁴ and those ensuing from the 1992 Rio Summit (Rio Declaration, Agenda 21, Convention on Biological Diversity), sees the diversity of cultures and languages as facets of the diversity of life on earth, along with biodiversity. It argues that the world’s richness of cultures and languages should be understood as an intrinsic component of the global human-environment complex. It also proposes that this richness arises as the product of millennia of symbiotic, quasi-co-evolutionary relationships of human communities with their surrounds— humans depending on the environment for their survival while modifying it in the course of adaptation.

Seen this way, cultures and languages are at one and the same time essential elements of what it means to be human, and an essential tool for humans’ interactions with nature. For this cultural and linguistic richness to continue to thrive and to be in a mutually supportive relation with the diversity of the natural world, traditional knowledge and linguistic competence must continue to be transferred from one generation to the next within each of the world’s diverse human communities, thus ensuring a healthy, dynamic, and

productive link between the past and the future.²⁵ Maintaining and restoring cultural and linguistic diversity then becomes an intrinsic part of the work of conservation— if the latter is understood in the extended Leopoldian sense proposed above.

...linguistic and biological diversity are spatially related, with the highest overlaps in the tropics, and particularly in the Amazon Basin, Central Africa, and Indomalaysia/Melanesia

The foundational work in the field of biocultural diversity has looked at the relationships between biodiversity and cultural-linguistic diversity on a global scale, in particular by cross-mapping the worldwide distributions of these diversities

and analyzing the overlaps. Whether by looking at the coincidence of "megadiverse countries" for both species and language richness,²⁶ or showing the concentration of high linguistic diversity in WWF's "Global 200" priority ecoregions,²⁷ or going beyond the boundaries of both countries and ecoregions and concentrating on the distribution of languages in "plant diversity zones",²⁸ these studies have clearly illustrated a basic point: linguistic and biological diversity are spatially related, with the highest overlaps in the tropics, and particularly in the Amazon Basin, Central Africa, and Indomalaysia/Melanesia.²⁹ GIS (Global Information Systems) technology has emerged as a useful tool not only to develop the mappings, but also, and above all, to test hypotheses and begin to address issues of correlation and *mutual influence* concerning the nature of these overlaps.³⁰ Figure 2 (reproduced in colour on the back cover of this journal), is one example of the use of GIS in mapping biocultural diversity.

In this work, linguistic diversity (the richness of distinct languages spoken on earth,

Global cross-mappings and analyses of biological and linguistic diversity can and should be incorporated in the making of national and international policies concerned with conservation and sustainable development and with the links between environmental and societal goals.

approximately 6,800 today) is commonly used as representative of cultural diversity. Although in many cases there is no one-to-one correspondence between languages and ethnic groups, there is general agreement that languages are a valid proxy for cultural diversity, as they tend to constitute a strong marker of cultural identity.³¹ More recent biocultural work has begun to incorporate

other indicators of cultural diversity, such as richness of ethnic groups and religions, in the attempt to develop more sophisticated analyses of the relationships between biological and cultural diversity and to quantify

these relationships by means of integrated biocultural indexes.³² Just as biodiversity is measured in a variety of ways, the goal here is to begin to reflect more of the complexity of the "culture" concept and to combine all these measures in order to gauge the state of biocultural diversity worldwide.

So far, available data have only allowed representing the current state of biocultural diversity. An important future aim of such analyses is to move beyond static representations, through the elaboration of time-series data that will provide a picture of historic trends in biocultural diversity. The future development of these analyses will also greatly benefit from the incorporation of other key indicators of cultural diversity. Especially relevant among these will be quantitative measures of persistence and loss of traditional ecological knowledge, such as ethnobiologists have begun to devise.³³

Biocultural diversity in international policy

Global cross-mappings and analyses of biological and linguistic diversity are powerful in illustrating at a glance the biocultural diversity concepts, and global biocultural indexes can significantly aid the overall assessment and monitoring of biocultural diversity. Both kinds of tools can and should be incorporated in the making of national and international policies concerned with conservation and sustainable development and with the links between environmental and societal goals. There are signs of movement in that direction. In the case of the implementation of the Convention on Biological Diversity (CBD), recent CBD directives have specifically identified the maintenance of diversity of indigenous and local communities as an intrinsic part of the goal of reducing global biodiversity loss, and called for indicators of the status and trends of cultural diversity (and particularly of traditional knowledge and practices). The

Durban Accord issued at the 2003 World Parks Congress celebrated “the miracle of the diversity of nature and of cultures that possess the wealth, the wisdom and knowledge to enable conservation and sustainable use”, noted the profound transformations causing loss of both biological and cultural diversity, and urged commitment to strengthen protected areas worldwide based on threats to both natural and cultural heritage. Within IUCN, the Commission on Environmental, Economic, and Social Policy (CEESP)’s proposed 2005-2008 programme includes a Culture and Conservation theme that aims, among other things, to improve “knowledge, policy, and practice linking cultural and biological diversity and their common threats and strengthening opportunities”.³⁴ The topic of biocultural diversity will also be addressed at the World Conservation Congress in November 2004.

Clearly, the ongoing global work in the field of biocultural diversity is well poised to engage with the international policy arena. On the other hand, only “zooming in” on given sub-global geographical areas with a biocultural lens can allow for in-depth and comprehensive analyses and for the implementation of specific local, regional, or national plans for biocultural diversity conservation. Studies are beginning to be developed that seek to analyze given areas as “biocultural ecoregions”—that is, areas whose makeup is explicitly recognised as being shaped by the mutual interactions between humans and the environment over time.

Biocultural diversity in practice

One such example is a study focusing on the Colorado Plateau of the US Southwest, one of North America’s most bioculturally diverse ecoregions.³⁵ This study synthesises and integrates for the first time a wide range of data on the natural and cultural makeup of the Colorado Plateau. It brings out the close relationship, both historical

and present-day, between humans and the environment in this ecoregion, paying special attention to the role of traditional knowledge and languages in shaping and sustaining this relationship. This work also provides a preliminary assessment of the current state of the Plateau’s climatic, geomorphological, hydrological, biological, ethnolinguistic, and agricultural diversity. It identifies trends in these diversities and some of the main threats that are affecting them, and envisions future prospects if such trends and threats continue. It further seeks to outline suitable response options to counteract and, if possible, reverse negative trends in the region’s biocultural diversity.

More such context-specific studies are needed in order to refine our understanding of human-environment ecosystems from a biocultural perspective, and to flesh out the policy and implementation frameworks required to foster biocultural diversity conservation regionally. Meanwhile, there is much to be learned from the many grassroots efforts already underway throughout the world. While these local-level initiatives may or may not conceptualise themselves as “biocultural” in nature, they are often so in practice. In ingenious and creative ways they manage to maintain, protect, and restore the links between language, knowledge, and the environment in an integrated way. For local communities, those links are not a matter of scientific discovery. They are a matter of everyday, lived experience.

In the Sierra Tarahumara mountains of northern Mexico, the Rarámuri people, one of the most resilient indigenous groups of North America, are struggling to maintain their ecosystem-based livelihoods and their cultural integrity in the face of external and local forces that are degrading the environment, affecting their way of life, and alienating the younger generations. They have focused on the creation of a complementary education initiative, for both students and

To ensure that the youth continue to stay in place and to embrace their indigenous identity, values, and language, the Pikangikum elders are guiding the development of new forest-based livelihood opportunities for the youth, in a context in which the community's knowledge traditions, language, and stewardship values play a leading role.

community members at large.³⁶ The aim of this initiative is to elaborate a general education curriculum based on Rarámuri as well as local Mestizo world views, knowledge, and values, to foster the maintenance of the Rarámuri language and cultural traditions, and to promote intercultural understanding. Community activities to restore the health of the local environment are also part of the initiative. In this effort, the Rarámuri are actively integrating the elders' traditional ecological knowledge, expressed in their native language, with the expertise of outside researchers.

the economic and social renewal of their community.³⁷ The Pikangikum people have the highest rate of indigenous language retention in Northern Ontario and a strong attachment to their traditional territory. To ensure that the youth continue to stay in place and to embrace their indigenous identity, values, and language, the Pikangikum elders are guiding the development of new forest-based livelihood opportunities for the youth, in a context in which the community's knowledge traditions, language, and stewardship values play a leading role. In this initiative, the maintenance of forest cover and biodiversity is explicitly linked to the maintenance of the indigenous language, culture, and knowledge tradition.

In the East Kimberley region of Western Australia, the Jaru people's elders have been actively recording stories about people and place.³⁸ Connecting people to place



Figure 3. Rarámuri authorities discussing project plans with visiting researchers in the Sierra Tarahumara of northern Mexico. (Courtesy ©David Rapport)

In Canada, the Pikangikum (Ojibway) First Nation of northwestern Ontario has developed the Whitefeather Forest Initiative for

through stories lies at the root of aboriginal identity. People are considered a part of the landscape, and the landscape provides the material, spiritual, and ethical connection between past and future generations. It embodies the essence of the Aboriginal code for how to live properly, known as the "Dreaming". This code is "written" on the land through stories linked to places and to peoples' historical relationships with those places and the plants and animals found therein. Jaru elders are also putting together a book about plants and animals found in Jaru country, with their indigenous names and uses, in the effort to transmit this knowledge, and

the language in which it is encoded, to their children. The elders recognise that the welfare of their communities depends on the relationship between people and the envi-

ronment, and that language is the key vehicle for conveying the aboriginal ethic of caring for the land.



Figure 4. Barbara Sturt, a Jaru woman from the Kimberley, Western Australia, telling about her great-grandmother's "stories about place" to linguist Joseph Blythe. Courtesy © Janelle White).

The Wanniyalaeto (Veddas), Sri Lanka's indigenous 'first people', who have inhabited the island's semi-evergreen monsoon dry forest for millennia, are facing serious challenges to their livelihoods and cultural survival.³⁹ Development activities have drastically reduced their traditional forest habitat, displaced many Wanniyalaeto from the forest, disrupted their social cohesion, and forced the assimilation of many of them. Many, however, have chosen to return to their ancestral territories and, with the help of an international NGO, are developing a plan to protect and maintain both the local biodiversity and their indigenous culture in an integrated fashion. The plan will allow Wanniyalaeto families to return to live in and manage their ancestral habitat, creating a sanctuary both for the local flora and fauna and for Wanniyalaeto culture. In this sanctuary, the Wanniyalaeto will recover self-reliance, self-respect, and social cohesion, re-establish their holistic relationship

with their habitat, rekindle their indigenous traditions of environmental management and use of wild foods and medicinal plants, document and disseminate their environmental lore, and benefit from bilingual education opportunities in both the Wanniyalaeto and the Sinhala languages.

Documenting and promoting biocultural diversity

Examples of grassroots initiatives like these could be multiplied manifold. Each and all of them provide significant insights into an integrated approach to the maintenance and restoration of biological, cultural, and linguistic diversity— an approach that, by and large, still eludes larger-scale, top-down approaches to environmental as well as cultural conservation. Making these experiences and the lessons that can be drawn from them more widely known to a larger audi-

ence might help promote this integrated approach beyond the local level and make it more accepted, indeed desirable, also for governmental, non-governmental, academic, and other institutions at national and international levels. A project developed by Terralingua, an international non-profit organisation devoted to researching and promoting biocultural diversity,⁴⁰ seeks to do just that. Terralingua is compiling materials for a "Global Source Book on Biocultural Diversity" (see Box 1), which is meant to provide the field of biocultural diversity with its first global source of information.

The ultimate goal of this effort is to create a world-wide network of like-minded organisations and individuals that, together, can better work to define, accomplish, and promote the goals of biocultural diversity protection, maintenance, and revitalisation, to the benefit of each and all. Forming a common front should help raise the visibility and acceptability of the concept and practice of

biocultural diversity conservation vis-à-vis policy makers, donors, the media, and the general public. And through this process, hopefully the idea of biocultural diversity will also begin to take root in academic institutions, leading to educational and research programs that will form a new generation of integrative-thinking, trans-disciplinary scholars and practitioners, who will be better able to bridge the gap between

“culture” and “conservation”. The continuity of life on earth, and the attainment of genuine human well being with equality and justice, wholly depend on a sea change from the prevailing disconnected views of nature and culture toward a fully integrated “humans-in” perspective. The concept of biocultural diversity is essential to take such perspective from theory to action.

Box 1. Call for Contributions to a Global Source Book on Biocultural Diversity

Terralingua would like to collaborate with practitioners of biocultural diversity conservation to gather information for a *Global Source Book on Biocultural Diversity*. The result of this effort, which will be made available both in print and in electronic format, will provide the biocultural diversity field with its first global source of information.

The loss of languages, cultural practices and indigenous ecological knowledge all reflect the breakdown in the relationship between humans and their environment. Seeking solutions for the sustainability of both human communities and the environment requires recognizing the link between cultural diversity and biological diversity. Terralingua invites you to work together with us to document information on biocultural diversity conservation on a global scale.

We are asking for your input in a survey of projects, programs, and initiatives that support biocultural diversity. The survey will lead to an inventory and classification of such activities around the world. Based on further collaboration and information gathering, some of the entries will be selected as “model examples”. These will be highlighted through local stories in the voices of the people involved. Discussion of “best practices” and “lessons learned” will offer guidance for future efforts at biocultural diversity maintenance and restoration.

The Source Book will benefit practitioners of biocultural diversity conservation by increasing the visibility of this newly emerging field and by developing a network of people actively involved in these issues.

The survey form and further details are available on the Internet at:

<http://www.terralingua.com>

or may be obtained by contacting Dr. Ellen Woodley: Ewoodley@uoguelph.ca

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Notes

- 1 DiSilvestro, 1993; Mittermeier *et al.*, 1998; Olson and Dinerstein, 1998.
- 2 Terborgh, 1999; Soulé, 2000; Rice *et al.*, 2001.
- 3 Posey, 1999; Diamond, 2001; Maffi, 2001; Harmon, 2002.
- 4 Posey and Balée, 1989; Williams and Baines, 1993; Western *et al.*, 1994; Berkes, 1999; Heckenberger *et al.*, 2003; Carlson and Maffi, 2004.
- 5 López-Zent and Zent, 2004.
- 6 Berkes and Folke, 1998.

- 7 For reviews, see: Hyndman, 1994; Orlove and Brush, 1996; Wilshusen *et al.*, 2002; Colchester, 2004.
 - 8 Chicchón, 2000; Marsh *et al.*, 2000; Redford and Sanderson, 2000; Schwartzman *et al.*, 2000a, b; Terborgh, 2000. For an attempt to mediate between "preservationist" and "devolutionist" perspectives, see Romero and Andrade, 2004.
 - 9 Snow, 1993.
 - 10 Denevan, 1992; Dann, 2000; Mann, 2002.
 - 11 Diamond, 1986; Redford, 1990; Krech, 1999. For an anthropologist's take on the role of environmentalists in creating the myth, see Brosius, 1997.
 - 12 Colchester, 2004.
 - 13 Hyndman, 1994.
 - 14 Stevens, 1997; Beltran, 2000; Weber *et al.*, 2000.
 - 15 Conklin and Graham, 1995; Kuper, 2003; Kenrick and Lewis, 2004.
 - 16 Maffi, 2004.
 - 17 WRI, 2000.
 - 18 Maffi *et al.*, 1999; Skutnabb-Kangas *et al.*, 2003.
 - 19 Harmon, 2002; Rapport *et al.*, 1998.
 - 20 Dora Marks Dauenhauer and Richard Dauenhauer, quoted on p. 68 of Lord, 1996.
 - 21 Quoted from p. xix of Sanders, 1999.
 - 22 Ibid.
 - 23 Dasmann, 1991; Nietschmann, 1992; McNeely, 1997; Posey, 1999; Maffi, 2001; Harmon, 2002.
 - 24 IUCN *et al.*, 1991.
 - 25 Nabhan and St. Antoine, 1993; Zent, 2001.
 - 26 Harmon, 1996; Harmon and Maffi, 2002; Skutnabb-Kangas *et al.*, 2003.
 - 27 Oviedo *et al.*, 2000.
 - 28 Stepp *et al.*, 2004.
 - 29 Harmon and Loh, 2004.
 - 30 Stepp *et al.*, 2004.
 - 31 Harmon, 1996.
 - 32 Harmon and Loh, 2004.
 - 33 Zent, 2001; Zarger and Stepp, 2004.
 - 34 CEESP, 2004.
 - 35 Nabhan *et al.*, 2002.
 - 36 Carlos Palma Batista, personal communication, 2004.
 - 37 <http://www.whitefeatherforest.com>.
 - 38 White, 2003.
 - 39 http://vedda.org/bio-diversity_plan.htm.
 - 40 <http://www.terralingua.org>.
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Development of a GIS for Global Biocultural Diversity

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The study of biocultural diversity involves a search for patterns across landscapes. As an inherently spatial phenomenon, biocultural diversity can readily be explored through the use of GIS. We report here on preliminary results of an effort to develop a GIS to map and catalog biocultural diversity on a global scale. We also discuss potential relevant factors in the creation, maintenance and loss of biocultural diversity that can be demonstrated through a GIS. As research on biocultural diversity moves from demonstrating the relationship between biological and cultural diversity to actually exploring mutual influence or even causal factors, it becomes increasingly important to be able to recognise spatially distributed patterns. GIS provides a powerful tool in this analysis while also helping guide further areas of inquiry.

In the Fall of 2003 we were contacted by Terralingua, a Washington, D.C. based NGO dedicated to the conservation of biocultural diversity, about developing a GIS for biocultural diversity. Earlier work by researchers associated with Terralingua at developing GIS maps of biocultural diversity had yielded promising results. Most notable of these efforts was a collaboration with World Wide Fund for Nature (WWF) which resulted in a map that demonstrated the distribution of ethnolinguistic groups through the Global 200 Ecoregions identified by WWF¹. We immediately saw the possibilities for further development of a GIS in this area and began work in January 2004.

Development of the GIS

We began the project by developing a series of working questions to guide us in the development of the GIS. After developing a list we then attempted to group the specific questions together into a few main questions to keep in mind. These questions provide the "why" behind the GIS. As GIS is

an inherently powerful and even seductive technology, it is easy to fall into a mode where the development of the maps themselves becomes viewed as the end, rather than the means to explore a particular phenomenon. By keeping the following questions in mind we sought to avoid heading in such a direction. Our main working questions are: 1) Is there a shared pattern in the spatial distribution of biological and cultural diversity worldwide? 2) What factors influence, or drive, the distribution of biological and cultural diversity? 3) What are the factors that contribute to maintenance and loss of linguistic and biological diversity? 4) What are the effects of globalisation on linguistic and biological diversity? Our most immediate concern, however, was to accurately depict the distribution of linguistic diversity and biological diversity and to date we have mostly focused on this problem.

...our most immediate concern was to accurately depict the distribution of linguistic diversity and biological diversity....

We also brainstormed on potential data sources to add to the database. As these additional data layers are added to the GIS database, it becomes possible to explore more complex patterns and relationships amongst the data. These data can show patterns of association that can then be tested through rigorous statistical analyses. We developed a long "wish list" of data for possible inclusion in the global database if it were available. For example, language distribution, global distribution of species (flora and fauna), global distribution of human populations, global development indices, quantitative measures of species endemism, climate and precipitation data, agricultural intensiveness, soil distribution, density of

endangered species, density of endangered languages, energy budgets for countries, roads and connectivity, and many more. Armed with this list, we searched for global data to incorporate in the GIS. We quickly narrowed the list down to those data sources that were available and could be used for the GIS. A common problem in using different data sets is that the resolution, scale and map projections differ, making it crucial to accurately standardise the datasets within the GIS. Early on we decided to rely as little as possible on datasets that were based on country boundaries in favor of a more accurate spatial distribution that did not take into account political boundaries. This would enable us to demonstrate the distribution of biocultural diversity geographically rather than politically.

The problem of mapping biological diversity is a considerable one, and a discussion of these difficulties is beyond the scope of this paper. Suffice to say that many researchers have explored this issue with varying degrees of success. In our opinion, the team led by Wilhelm Barthlott at the University of Bonn has produced one of the more sophisticated analyses of spatial distribution of biological diversity, specifically vascular plant diversity². Rather than rely on distribution in political units (e.g. flora of countries) or geographical characteristics (e.g. flora of the Amazon) they calculate vascular plant diversity based on standardised units of area (10,000 sq. km). This allows for comparable diversity categories on a global scale. They use ten categories of diversity based on number of vascular plant species which they call diversity zones. The ten diversity zones (DZ) with species number per 10,000 s. km are DZ 1 <100 spp.; DZ 2 100-200 spp.; DZ 3 200-500 spp.; DZ 4 500-1000 spp.; DZ 5 1000-1500 spp.; DZ 6 1500-2000 spp.; DZ 7 2000-3000 spp.; DZ 8 3000-4000 spp.; DZ 9 4000-5000 spp.; DZ 10 >5000 spp. We contacted Barthlott and his associates and they generously provided a base map of global plant diversity based on the above figures

that we incorporated into the GIS.

The other crucial dataset required was the global distribution of languages. For these data we relied on the Ethnologue database produced by the Summer Institute of Linguistics³. Ethnologue is widely regarded as the most comprehensive data source of current languages spoken worldwide. Its major limitation is that it does not indicate spatial extent of the speakers for a given language, only a singular point denoting the most central location of the population. However, on a global scale this is not really problematic, and by using a singular point it allows for the graphical depiction of all of the world's languages on a single map.

...one immediate trend that we noticed was the relationship between low population density and, in some areas, high biocultural diversity....

Global distribution of biocultural diversity

With these layers we were able to produce an accurate depiction of the distribution of linguistic and biological diversity worldwide (please see Figure 1, placed in the back of the back page of the journal, as the figure needs color). For the sake of graphical simplicity we aggregated the ten diversity zones into five categories with Very Low <200 spp.; Low 200-1000 spp.; Medium 1000-2000 spp.; High 2000-4000 spp.; Very High >4000 spp. This map clearly demonstrates the co-occurrence of high linguistic diversity with high biological diversity. Several regions in particular stand out in this regard: Mesoamerica, Andes, West Africa, Himalayas, and South Asia/Pacific. The general trend towards increasing linguistic diversity in areas of increasing plant diversity (or vice versa) is noted in Table 1 and Figure 2, with the diversity zones disaggregated back to the original ten classes. A regression analysis shows that $r^2 = 0.9873$, noting a strong correlation between increas-

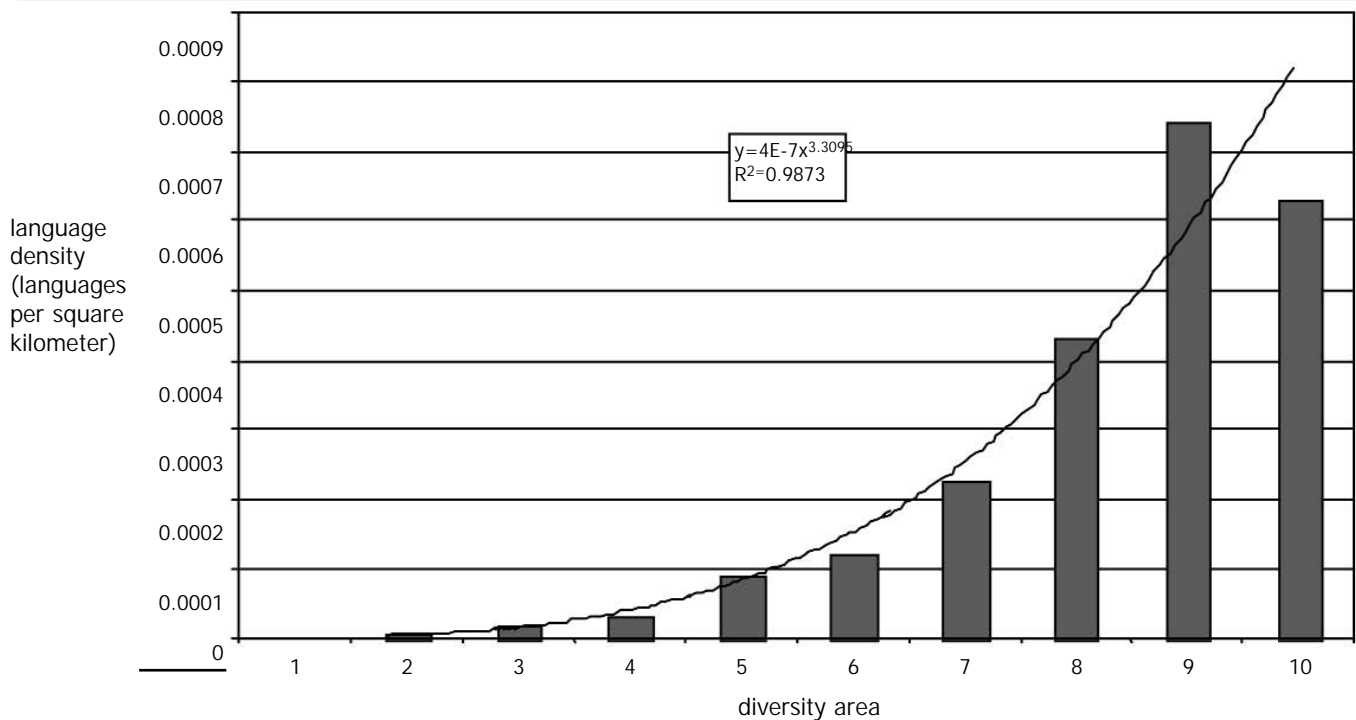
ing biological diversity and increasing cultural diversity, as represented by number of languages spoken in a given region. One minor exception to this relationship occurs in DZ 10, the highest biodiversity zone,

where the number of languages drops off slightly. However, this is likely due to the relatively small area of this diversity zone. Despite this, the correlation still remains strong.

Table 1. Density of languages (languages per Km²) of each of the plant diversity zones.

Diversity zone	number of languages	area (km ²)	Languages per km ²
1	10	35936929.00	2.78265E-07
2	72	11141286.00	6.46245E-06
3	264	13132142.00	2.01033E-05
4	578	17344368.00	3.33249E-05
5	1057	11386278.00	9.2831E-05
6	738	6088899.40	0.000121204
7	1283	5616381.10	0.000228439
8	1336	3084807.40	0.000433090
9	654	880116.98	0.000743083
10	313	493742.63	0.000633934
Total	6305	105104951.00	

Figure 2. Relation between plant diversity classes and language diversity per unit area.



While the viewer can undoubtedly see other patterns emerge in Figure 1, we would like to call attention to some trends that are visible. The increase of biodiversity in tropical regions is commonly known and linguistic diversity follows this trend as well. We have other maps under development that explore this relationship in greater detail and that incorporate social factors as well. For example, one immediate trend that we noticed was the relationship between low population density and, in some areas, high biocultural diversity. Some of the best examples of this relationship are in the South Asia/Pacific region (Figure 3) and Himalayas (Figure 4). [As the figures need color, you will find them in the back of the back page of the journal] A likely explanation is that increasing population density leads to linguistic homogenisation and also increasing impact on the biophysical environment.

Future directions

There is much more work to be done in developing a GIS database to assess biocultural diversity. It is not enough to merely demonstrate the relationship. The next wave of scholarship needs to explore various types of association, mutual influence and even possible causal factors in the development, maintenance and loss of biocultural diversity. GIS can aid in this process by not only spatially demonstrating such factors but also by allowing for the refinement of hypotheses and even the creation of new ones. Our next step is to continue the development of the global database while also starting work on a regional level. A regional approach in an area such as Mesoamerica or the Amazon/Andean region would allow for more refined hypotheses and the incorporation of more detailed data.

Apart from the theoretical aspects involved in the use of GIS, there are important applied aspects as well. Complex phenomena such as biocultural diversity can be made more accessible to a broad audience by the development of well-designed and easily understood visual representations such as

maps. Biocultural diversity maps, such as the ones reported here can serve as invaluable tools for stakeholders, educators and policy-makers. By exploring the relationship between language and biological diversity and investigating potential factors that promote or inhibit biocultural diversity, we hope to enable decision-makers to adopt appropriate land management policies that will protect and conserve the diverse biocultural landscapes throughout the world.

Notes

- 1 Oviedo, Maffi and Larsen, 2000
- 2 Barthlott, Lauer and Placke, 1996; Barthlott *et al.*, 1999; Mutke and Barthlott, in press (2004).
- 3 Grimes, 2000

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The IBCD— a measure of the world's biocultural diversity

David Harmon and Jonathan Loh

Abstract: The relationships between biological and cultural diversity, and the growing threats they face, have drawn increasing attention from scholars over the last decade. Analyses of these relationships are beginning to crystallise around the concept of *biocultural diversity*, the total variety exhibited by the world's natural and cultural systems. Here, we outline an index of biocultural diversity (IBCD), the first attempt to quantify global biocultural diversity by means of a country-level index. The index uses five indicators: the number of languages, religions, and ethnic groups (for cultural diversity); and the number of bird/mammal species and of plant species (for biological diversity). The IBCD is calculated in three ways: an unadjusted richness measure, a measure of richness adjusted for land area and a measure of richness adjusted for the size of the human population. These measures, when analyzed in concert, indicate three "core regions" of exceptional biocultural diversity: the Amazon Basin, Central Africa, and Indomalaysia/Melanesia.

The relationships between biological and cultural diversity, and the growing threats they face in common, have drawn increasing attention from scholars, activists, and public officials over the last decade.¹ It is now not unusual to read prominent (though often rather superficial) declarations of the importance of preserving biological *and* cultural diversity as a central conservation goal. Concerns about these dual realms of diversity have found their way into major international conservation communiqués (e.g., the Durban Accord of the 2003 World Parks Congress) and are enshrined in capstone international instruments, such as the Convention on Biological Diversity.

Underlying these generalised expressions of concern are efforts at deepening the theoretical understanding of how biological and cultural diversity are related. Scholarly analysis in this field is beginning to crystallise around the concept of *biocultural diversity*, the total variety exhibited by the world's natural and cultural systems (Maffi 2001). Biocultural diversity includes biological diversity at all its levels, from genes to populations to species to ecosystems; cultural diversity, ranging from individual ideas to

languages to entire cultures; and the interaction of these with the abiotic or geophysical features of the earth. A basic premise of first-generation scholarship on biocultural diversity has been that biological and cultural diversity affect one another in important ways. Studies to date have focused on establishing geographical correlations between the two by identifying areas of overlap, investigating the mechanisms through which they may affect each other (e.g., how language may be related to long-term environmental management in indigenous communities), and analyzing the threats to them.²

For the past several years the NGO Terralingua has been working on several fronts to assess the world's biocultural diversity. One thing that has been missing so far from a global assessment is a quantitative measurement of biocultural diversity. To fill that gap, we have developed an index of biocultural diversity (IBCD). The IBCD uses a combination of five indicators of biocultural diversity to establish rankings for 238 countries and territories:

- the number of languages, religions, and ethnic groups present within each country as a proxy for its cultural diversity; and

- the number of bird and mammal species (combined) and the number of plant species as a measure of its biological diversity.

This paper outlines the methods used to create the IBCD and the main results obtained; space does not permit discussion of many important details. Readers wanting a full explanation are referred to the source document,³ which is available through Terralingua (www.terralingua.org).

Components of the IBCD

The IBCD has three parts:

- A *biocultural diversity richness component* (BCD-RICH), which is a relative measure of a country's "raw" biocultural diversity using unadjusted counts of the five indicators.
- An *areal component* (BCD-AREA), which adjusts the indicators for land area and therefore measures a country's biocultural diversity relative to its physical extent. This is important to measure because large countries are more likely to have higher biological diversity than small countries. Nevertheless, some small countries have biological diversity that is high relative to their area, just as some large countries have low biological diversity relative to their area. BCD-POP adjusts the rankings to account for these situations.
- A *population component* (BCD-POP), which adjusts the indicators for human population and therefore measures a country's biocultural diversity relative to its population size. This is important to

there are only a handful of countries that rank highly in all three components of biocultural diversity.

measure because countries with high human populations are more likely to have higher cultural diversity than countries with small populations. Nevertheless, some countries with small populations have cultural diversity

that is high relative to their population size; and, conversely, some countries with

high populations have cultural diversity that is low relative to their population size. BCD-POP adjusts the rankings to account for these situations.

BCD-RICH is the most straightforward measure of biocultural diversity, but BCD-AREA and BCD-POP are equally important components of the IBCD because they highlight countries that are small in area and/or population size but which have relatively high biocultural diversity. In effect, they broaden the analysis beyond mere counts of cultural groups and species. As we shall see, there are only a handful of countries that rank highly in all three components.

Methods

Each of the three parts of the IBCD gives equal weight to cultural and biological diversity. For example, a country's overall BCD-RICH score is calculated as the average of its cultural diversity richness score (aggregated from the scores for languages, religions, and ethnic groups) and its biological diversity richness score (aggregated from the scores for bird/mammal species and plant species). The same holds true for BCD-AREA and BCD-POP.

When values for these indicators are ranked on a global basis, it becomes apparent that biocultural diversity is not evenly distributed. A few countries are megadiverse, with very large values; then the ranking rapidly diminishes to much lower values found in more typical countries. Because this makes comparisons among countries difficult, we used a common log scale to produce a linear distribution.

For example, the language indicator index for BCD-RICH is calculated as the log of the number of languages spoken in a country divided by the log of the number of languages spoken worldwide (Table 1). The process was repeated for the other four indicators to derive BCD-RICH.

Table 1. Unadjusted language diversity index (LD-RICH)

	no. of languages (L)	log L	LD-RICH (log L _i /log L _{world})
World	6,800	3.83	1.000
Papua New Guinea (highest)	833	2.92	0.762
Mali (average)	45	1.65	0.431
Bermuda (lowest)	1	0.00	0.000

As noted above, to compensate for the fact that large countries tend to have a greater biological and cultural diversity than small ones simply because of their greater area (or greater population), we calculated two additional diversity values for each country by adjusting first for land area (BCD-AREA) and second for population size (BCD-POP). This was done by measuring how much more or less diverse a country is in compari-

son with an expected value based on its area or population alone. The method used is a modified version of that used by Groombridge and Jenkins.⁴ As an example of the methods used, calculations for the language indicator value are shown Tables 2 and 3. The process was repeated for the other four indicators to derive BCD-AREA and BCD-POP.

Table 2. Area-adjusted language diversity index (LD-AREA)

country or territory	area (km ²)	log A	total no. of languages L	log L	expected log L value	deviation from expected value	LD-AREA
World/max. value	136,605,342	8.14	6,800	3.83	2.33	1.50	1.000
Papua New Guinea (highest)	462,840	5.67	833	2.92	1.56	1.36	0.952
Turkmenistan (average)	488,100	5.69	37	1.57	1.57	0.00	0.500
Greenland (lowest)	2,175,600	6.34	2	0.30	1.77	-1.47	0.011
Negative world/min. value	299,112	5.48	1	0.00	1.50	-1.50	0.000

Table 3. Population-adjusted language diversity index (LD-POP)

country or territory	population 2000 (in thousands) P	log P	total no. of languages L	log L	expected log L value	deviation from expected value	LD-POP
Maximum value	6,056,710	6.78	12,000*	4.08	2.48	1.60	1.000
Papua New Guinea (highest)	4,809	3.68	833	2.92	1.34	1.58	0.995
Pakistan (average)	141,256	5.15	76	1.88	1.88	0.00	0.501
Korea, DPR (lowest)	22,268	4.35	2	0.30	1.58	-1.28	0.099
Minimum value						-1.60	0.000

*artificial number of languages chosen to create a maximum value higher than the world total.

The expected diversity was calculated using the standard formula for the species–area relationship $\log S = c + z \log A$ where S = number of species, A = area, and c and z are constants derived from observation. Because the distributions of the five indicators against land area and population size are similar, we applied the same formula to indicators of cultural diversity. Hence, for BCD-AREA $\text{expected } \log N_i = c + z \log A_i$ where N_i = number of languages, religions, ethnic groups, or species in country i , and A_i = area of country i . The same formula was used for BCD-POP, except that P_i (population of country i) replaces A_i . To find the values of the constants c and z for each of the indicators, we scatter-plotted $\log N_i$ (where N_i = number of languages, reli-

gions, ethnic groups, or species in country i) against $\log A_i$ for all countries, and drew the best-fit straight line through the points. Examples for bird/mammal species and languages are in Figures 1 and 2, respectively.

To calculate the deviation of each country from its expected value, we subtracted the expected $\log N_i$ value from the observed $\log N_i$ value. The index is calibrated such that the world, or maximum, value is set equal to 1.0, the minimum value is set equal to zero and the average or typical value is 0.5 (meaning no more or less diverse than expected given a country's area or population).

Figure 1. Bird/mammal species-area plot

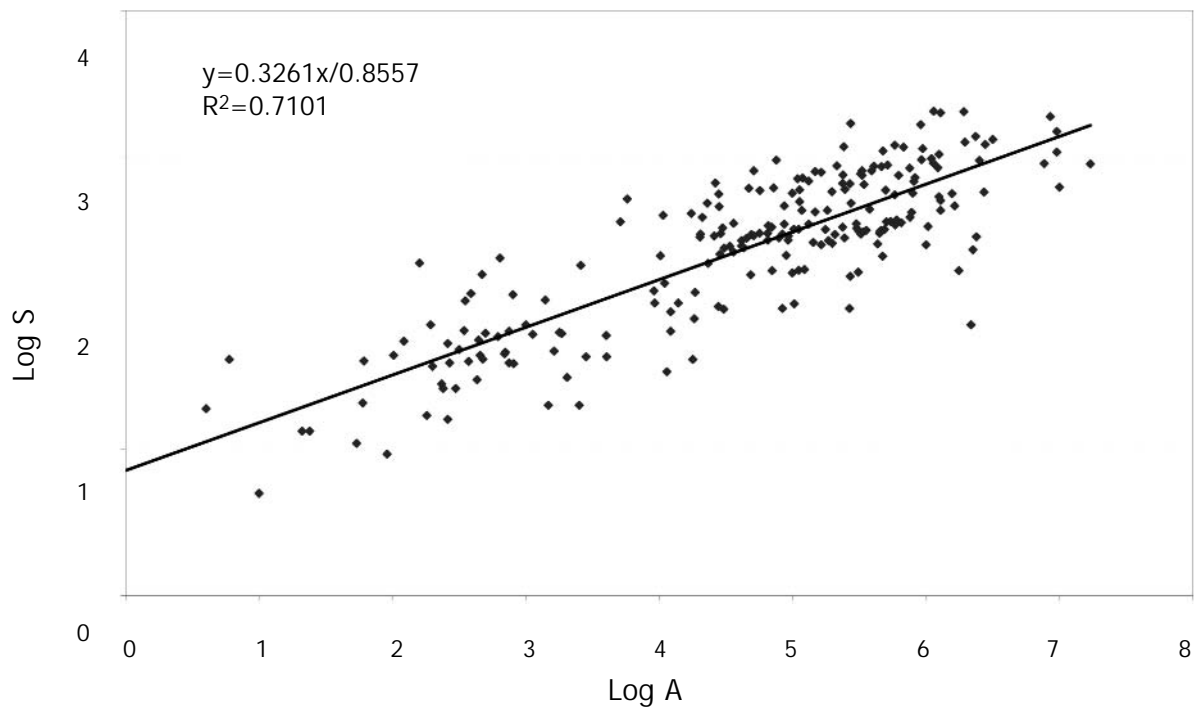
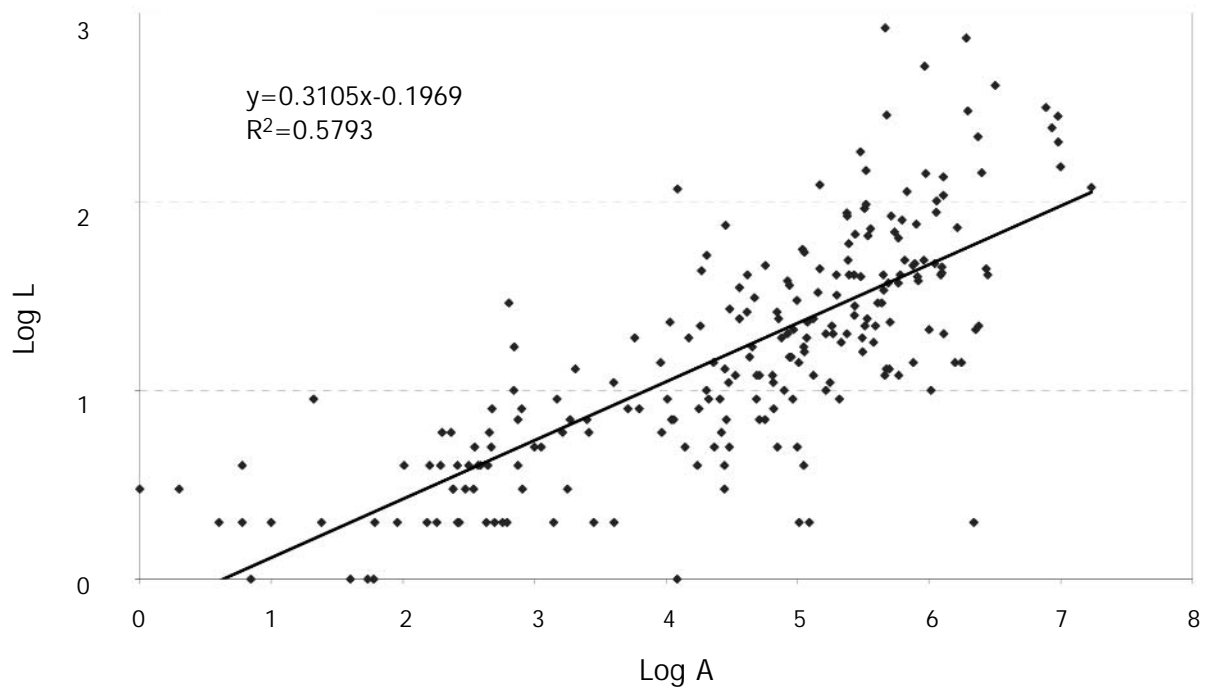


Figure 2. Languages-area plot



Detailed discussion of the methods is included in the source document.⁵ For BCD-AREA, countries smaller than 1,000 sq km are excluded from the analysis; for BCD-POP, countries with a population of less than 10,000 are excluded.

Results

The world's four most bioculturally diverse countries— Papua New Guinea, Indonesia, Cameroon, and Colombia— rank in the top

ten for all three components of the index (see Tables 4, 5, and 6). Papua New Guinea ranks 2nd in IBCD-RICH, 2nd in IBCD-AREA, and 1st in IBCD-POP, with Indonesia ranking 1st, 1st, and 4th, respectively. By any measure, these two countries are the world leaders in biocultural diversity. Cameroon and Colombia are not far behind, being the only other two countries to rank in the top 10 in all three components.

Table 4. IBCD-RICH: ten highest-ranking countries

Country or territory	Total no. languages (L)	Language diversity index, LD-RICH	Total no. of religions (R)	Religion diversity index, RD-RICH	No. of Ethnic groups	Ethnic group diversity index, ED-RICH	Cultural diversity index, CD-RICH	Total no. bird and mammal species (SB)	Birds and mammals diversity index, MD-RICH	Total no. plant species (S)	Plants diversity index, PD-RICH	Biological Diversity Index, BD_RICH	Index of Bio-cultural Diversity, IBCD_RICH
WORLD/ max value	6,800	1.000	10,000	1.000	12,583	1.000	1.000	14,709	1.000	250,876	1.000	1.000	1.000
Indonesia	736	0.748	535	0.682	744	0.700	0.710	2,034	0.794	29,375	0.827	0.811	0.760
Papua New Guinea	833	0.762	648	0.703	862	0.716	0.727	858	0.704	11,544	0.752	0.728	0.728
Brazil	246	0.624	183	0.566	224	0.573	0.588	1,886	0.786	56,215	0.880	0.833	0.710
India	414	0.683	293	0.617	439	0.645	0.648	1,313	0.748	18,664	0.791	0.770	0.709
China	207	0.604	156	0.548	254	0.587	0.580	1,494	0.762	32,200	0.835	0.798	0.689
Nigeria	521	0.709	460	0.666	497	0.658	0.677	955	0.715	4,715	0.680	0.698	0.688
United States	284	0.640	141	0.537	307	0.607	0.595	1,078	0.728	19,473	0.794	0.761	0.678
Cameroon	288	0.642	250	0.599	297	0.603	0.615	1,099	0.730	8,260	0.725	0.728	0.671
Congo, Dem Rep (Zaire)	221	0.612	173	0.560	260	0.589	0.587	1,379	0.753	11,007	0.749	0.751	0.669
Colombia	101	0.523	77	0.472	99	0.487	0.494	2,054	0.795	51,220	0.872	0.834	0.664

Table 5. IBCD-AREA: ten highest-ranking countries

Country or Territory	Area (km ²)	Language Diversity Index, LD-AREA	Religion Diversity Index, RD-AREA	Ethnic group Diversity Index, RD-AREA	Cultural Diversity Index, ED-AREA	Bird & mammal diversity Index, MD-AREA	Plant Diversity Index, PD-AREA	Biodiversity Index, BD-AREA	Index of Biocultural Diversity, IBCD-AREA
WORLD/ max value	136,605,342	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Indonesia	1,919,317	0.870	0.787	0.785	0.814	0.671	0.751	0.711	0.762
Papua New Guinea	462,840	0.952	0.837	0.850	0.880	0.597	0.663	0.630	0.755
Colombia	1,141,568	0.607	0.596	0.549	0.584	0.704	0.882	0.793	0.688
Cameroon	475,442	0.797	0.737	0.715	0.750	0.641	0.600	0.621	0.685
Malaysia	330,442	0.715	0.671	0.660	0.682	0.605	0.736	0.671	0.676
Brunei	5,765	0.602	0.552	0.515	0.557	0.767	0.798	0.782	0.669
India	3,165,596	0.765	0.713	0.702	0.727	0.560	0.639	0.600	0.663
Nigeria	923,768	0.853	0.787	0.758	0.799	0.576	0.459	0.518	0.658
Nepal	147,181	0.727	0.641	0.638	0.669	0.651	0.637	0.644	0.657
Brazil	8,547,404	0.645	0.643	0.586	0.625	0.567	0.782	0.675	0.650

Table 6. IBCD-POP: ten highest-ranking countries

Country or Territory	Population 2000 (thousand)	Language diversity index, LD-POP	Religion Diversity index, RD-POP	Ethnic Group Diversity Index, ED-POP	Cultural Diversity Index, MD-POP	Bird & mammal Diversity Index, MD-POP	Plant Diversity Index, PD-POP	Biodiversity Index BD-POP	Index of Biocultural Diversity, IBCD-POP
WORLD/ theoretical max value	6,056,710	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Papua New Guinea	4,809	0.995	0.965	0.936	0.965	0.756	0.785	0.771	0.868
French Guiana	165	0.618	0.624	0.590	0.611	0.895	0.901	0.898	0.754
Suriname	417	0.611	0.622	0.572	0.602	0.942	0.805	0.874	0.738
Cameroon	14,876	0.794	0.801	0.743	0.780	0.720	0.629	0.675	0.727
Indonesia	212,092	0.789	0.807	0.756	0.784	0.641	0.682	0.662	0.723
Brunei	328	0.616	0.586	0.530	0.577	0.863	0.860	0.862	0.719
Colombia	42,105	0.600	0.612	0.550	0.587	0.781	0.921	0.851	0.719
Gabon	1,230	0.654	0.630	0.608	0.631	0.808	0.779	0.793	0.712
Guyana	761	0.566	0.577	0.526	0.557	0.916	0.809	0.862	0.710
Solomon Islands	447	0.786	0.762	0.705	0.751	0.628	0.706	0.667	0.709

Moreover, by combining the results of BCD-RICH, BCD-AREA, and BCD-POP, we identified three “core regions” of global biocultural diversity that include countries of various sizes and populations (Figure 3):

- The Amazon Basin, consisting of Brazil, Columbia, and Peru, which ranked highly in BCD-RICH; Ecuador, which ranked highly in BCD-AREA; and French Guiana, Suriname, and Guyana, which ranked highly in BCD-POP.
- Central Africa, consisting of Nigeria, Cameroon, and the Democratic Republic of Congo (BCD-RICH), Tanzania (BCD-AREA), and Gabon and Congo (BCD-POP).
- Indomalaysia/Melanesia, consisting of Papua New Guinea and Indonesia (BCD-RICH), Malaysia and Brunei (BCD-AREA), and Solomon Islands (BCD-POP).

availability of data. The IBCD indices are measures of richness based on the number of languages, religions, ethnic groups or species of bird or mammal in a country. The underlying data record only the presence of absence of a particular language, religion, ethnic group or species of bird or mammal within each country, but not its relative abundance. Therefore the IBCD is sensitive to changes in diversity only when there is an increase or decrease in the number of languages, religions, ethnic groups or species in a country, but not when there is a change in their relative abundance. This is a limitation in the index, as the IBCD is sensitive only to extinctions, or introductions, but not to declines in population, or numbers of individuals, as long as that population remains greater than one. Extinction, however, is only the ultimate end point of a terminal decline, which would not be picked up by the IBCD.

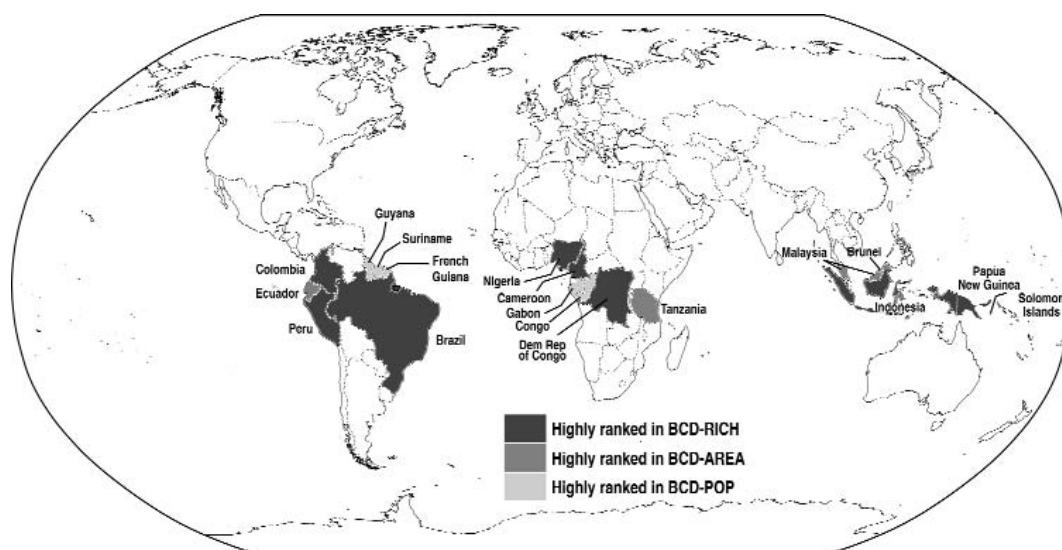


Figure 3. The three “core regions” of global biocultural diversity.

Limitations of the IBCD

It should be remembered that the aim of any index, including the IBCD, is to gauge current conditions and trends; it is not intended to substitute for in-depth analysis. Two of the limitations of the IBCD relate to its sensitivity to trends over time, and the

To be able to track trends in biocultural diversity in a country where the overall number of languages, religions, ethnic groups and species remains unchanged over time, it would be necessary to monitor the numbers of speakers of each language, practitioners of each religion,

members of each ethnic group and the populations of each species. Data availability and quality are the ultimate limiting factors for any index. All global environmental and cultural indices are based on datasets that are incomplete, possibly out of date, or of uneven quality. Furthermore, these indices rely on simple proxies to measure complex

characteristics.⁶ The point of a global-level index is to offer the broadest kind of guidance about the status of and large-scale trends affecting whatever is being measured. In line with this, the IBCD, as it now stands, is only a general guide to the current status of biocultural diversity on the largest scales (national on up). We are working on expanding the index to include time-series data that will indicate trends in biocultural diversity. Moreover, we fully recognise that a complete understanding of biocultural diversity can only be attained by analyzing it at *all* scales. Obviously, in many countries biocultural diversity varies widely from place to place, and this within-country variation will not be apparent at the scale on which the IBCD operates.

Uses of the IBCD

Why should anyone try to put numbers on biocultural diversity in the first place? We certainly do not claim that an index such as the IBCD captures the richness of the world's biocultural fabric—the lived-in depth of feeling that traditional indigenous communities express through their cultural practices, or the sense of place that many non-indigenous people feel toward where they live, to give two examples. Rather, the value of an IBCD and similar measures is largely practical and political. Pinpointing the world's areas richest in biocultural diversity helps raise the awareness of the general public (and opinion-leading organisations such as the news media) about what is at stake. That can help lead to changes in personal attitudes toward cultures and places not their own, with the effect (one hopes) of engendering more understanding and respect among people everywhere. That, in turn, should lead to more enlightened public policy.

In any national-level ranking system there is a risk that some people may be tempted to write off lower-ranked countries as being “less valuable” in terms of the characteris-

tic(s) at issue. As far as the IBCD goes, this would be a fundamental mistake: every country's biocultural diversity, no matter where it ranks, is an important part of the global whole, and the global whole is inherently worth preserving. Having said that, however, the IBCD could be used to help prioritise strategic investments in biocultural diversity conservation. The three “core regions” identified above are in that sense analogous to several well-known schemes for identifying the world's most important area for species conservation that have been developed over the last decade, including biodiversity hotspots,⁷ a globally representative network of ecoregions,⁸ endemic bird areas,⁹ and centers of plant diversity.¹⁰

The IBCD could also be adapted to play an important role in fulfilling the goals of the Convention on Biological Diversity (CBD). The CBD has set ambitious targets, to be met by 2010, for significantly reducing the rate of biodiversity loss worldwide. In February 2004, the CBD's seventh Conference of the Parties (COP7) proposed a suite of quantitative indicators to be used in measuring progress toward hitting the 2010 target. One of the goals of the CBD is to “maintain [the] socio-cultural diversity of indigenous and local communities”.¹¹ In line with this, COP7 specifically recognised the “status of traditional knowledge, innovations and practices” as one of its focal areas, and identified the “status and trends of linguistic diversity and numbers of speakers of indigenous languages” as a possible indicator.¹² The IBCD could be expanded to include time-series data on linguistic diversity in order to help make this index useful for CBD purposes. It also may be possible to incorporate into the IBCD other measures of change in the intergenerational transmission of traditional environmental knowledge.

Conclusion

The IBCD is the first quantitative measure

of the world's biocultural diversity at the national level. It is a snapshot of global biocultural diversity at the beginning of the 21st century, but it does not tell us how this diversity is changing, where it is changing faster (or more slowly) than the norm, what phenomena are associated with those changes. As more and better data become available, particularly on changes in the numbers of individuals in each language group, religion, ethnic group, or species, then it should be possible to expand the index to include trend measures. If we then use this information in concert with detailed qualitative analyses, we will have a much more comprehensive and accurate picture of the state of the world's biocultural diversity.

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Jonathan Loh (jonathan@livingplanet.org.uk) is an independent consultant specializing in the measurement, monitoring and evaluation of the natural environment, biodiversity and sustainable development. He formerly worked for WWF International, and is editor of the WWF Living Planet Report.

Notes

- 1 Harmon, 2002; Moore *et al.*, 2002; Sutherland, 2003.
- 2 Maffi, 2001; Harmon, 2002; Sutherland, 2003.
- 3 Harmon and Loh, 2002.
- 4 Groombridge and Jenkins, 2002.
- 5 Harmon and Loh, 2002. Data sources were as follows: languages, Grimes (2000); religions, Barrett *et al.* (2001); ethnic groups, Barrett *et al.* (2001); bird/mammal species, Groombridge and Jenkins (2002) with marine mammals excluded because of a lack of data; and plant species, Groombridge and Jenkins (2002).
- 6 For example, the widely cited U.N. Human Development Index boils down the enormously complicated factors that determine human well-being into three simple metrics: a long and healthy life (as measured by life expectancy), the attainment of knowledge (as measured by school enrollment), and enjoyment of a decent stan-

dard of living (as measured by per capita Gross Domestic Product, GDP). These metrics inevitably oversimplify the picture— particularly the third, per capita GDP, which is often criticised as being a poor measure of human welfare.

- 7 Myers *et al.*, 2002.
- 8 Olson *et al.*, 2001.
- 9 Stattersfield *et al.*, 1998.
- 10 Davis *et al.*, 1994.
- 11 CBD 2004:12.
- 12 CBD 2004.

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Biodiversity conservation, communication and language— is English a solution, a problem or both?

Lars T. Soeftestad

Abstract: Biodiversity conservation is becoming a global agenda operating on an equally global arena. The name of the game is communication and collaboration across cultures and languages, facilitated by Information and Communication Technologies (ICTs), especially the Internet and email. Part and parcel of globalisation, biodiversity conservation networking is increasingly facilitated by the use of the English language... but this cannot be separated from a certain promotion of Western values. To what extent can ICTs be used to increase understanding and awareness of the intricate connections between culture and language? How important are languages when we seek to understand the connection between biodiversity conservation and culture? How important are languages when we seek to involve people in conservation?

Globalisation can prompt the exclusion and marginalisation of diverse categories of people, especially among the least powerful in developing countries and countries in transition. At the same time, decentralisation can contribute to the integration and participation of some of these people in new processes, including for decision-making in matters of natural resource management. In the latter— increasingly facilitated by Information and Communication Technologies (ICTs)—the role of language and literacy, and their relationship with culture, have been given scant attention. It is a fact, for instance, that ICTs facilitate the marginalisation and homogenisation of languages, while it is an open question whether they also contribute to language growth and survival.

Within the context of development cooperation and natural resource management, the Community-Based Natural Resource Management Network (*CBNRM Net*, www.cbnrm.net) uses ICTs to communicate with its global membership. *CBNRM Net* is thus concerned about how globalisation and decentralisation are influencing traditional and modern CBNRM practices. How, for instance, is the present massive use of ICTs, relying largely on English, affecting languages and literacy in the area of environmental knowledge in CBNRM, and in natural resource management more generally?¹

Environmental knowledge, communication and language

The anthropological literature abounds with examples of the cross-cultural variability in perceiving, classifying and naming the environment and the relationships among its constituent parts. The Kwaio of the Solomon Islands, to give just one example, "... label fresh water as one substance, salt water as another; ... place birds and bats in one category, in contrast to moths, butterflies, and other flying insects; ... class fish and marine mammals together, and ... label with a single term most colors we would call blue and black".² To understand this, including the relationship between language and culture, it is necessary to take a deep dive into the culture itself.³ Given the vast cross-cultural variability in cultural classification of the natural inventory, it is clear that, when searching for traditional environmental knowledge, it makes an important difference if this is done using English or the vernacular language.⁴ In the former, one is at high risk of missing— or certainly glossing over— some important facts and relationships.

The global work on biodiversity conservation involves an extremely diverse set of participants, all influenced by their own culture, training, work, interests and languages and who are part of one or more overlapping networks. Analyses of the communication between the members of these networks, using network analysis,⁵ reveal some interesting patterns, among them that:

The networks consist of a number of centrally and peripherally located nodes that link the members (individuals and organisations),

A few members have agenda setting roles, while the large majority are at the receiving end; they contribute data and knowledge but only as and when requested,

While the flow of knowledge tends to be from the periphery to the center, decisions more likely flow the other way; and

The organisational rationale and values underpinning the networks, together with the language of communication, are likely to be Western and dominated by the English language.

One factor in this overall communication scenario that few so far have given much attention to is what *languages* are used, by whom, when, and for what purpose. The

ues of communication, and the resulting networks, come packaged with the English language. Thus, the use of English in the evolving globalisation process needs to be given more attention. This aim is not necessarily to find ways and means of replacing it with other former colonial languages (including Arabic, French, Portuguese, Russian, and Spanish) that play important roles at regional levels. Rather, we should give much more attention to the *impacts* that the use of these foreign languages have on: (1) minority languages and cultures, and (2) our ability to understand and represent these cultures, together with their accumulated knowledge and worldviews. These two aspects are closely related.

This is a package deal. Western culture and values of communication, and the resulting networks, come packaged with the English language.

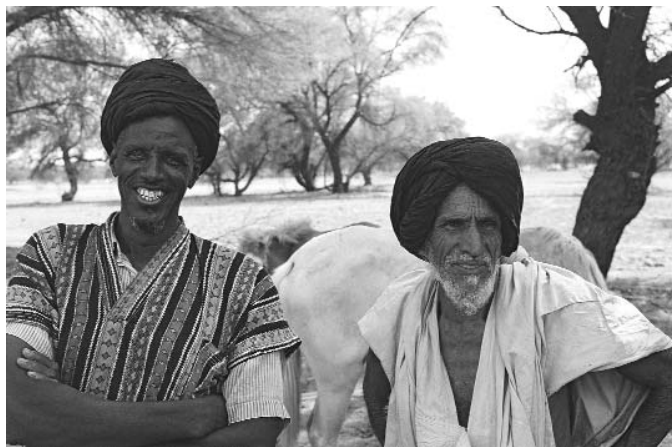


Figure 1. Members of the Ould Nacer tribe (Sawana, Hodh Al Gharbi, Mauritania). (Courtesy Lars T. Soeftestad)

very historical facts and global processes that create and maintain the kind of communication and networking structures that we are striving to make more human and participatory, are themselves responsible for the fact that English is fast becoming a global *lingua franca*. This is true in the case of biodiversity conservation as in development cooperation more generally. In other words, this is a package deal. The culture and val-

In contemplating needs for action, a deeper understanding of the above mentioned impacts and evolving processes is crucial. The agenda seems straightforward: we have to work at several levels to ensure the necessary equity, democracy, governance, participation, and transparency in the global communication and information structure. These global processes cannot (and should not) be reversed. In doing so, however, we face the dilemma (as some would have it) of using these very means of communication, namely ICTs, to our advantage. CBNRM Net attempts to respond to this.

CBNRM Net and dictionaries

If ICTs (specifically Internet and email) are key vehicles through which globalisation and use of the English language is spreading to all corners of the world, ICTs can also be used to counter this trend. For instance, CBNRM Net is preparing dictionaries of key terms relating to, among others, traditional natural resource management and is making these available online (presently in HTML, and eventually also as PDFs). CBNRM Net advocates a balanced approach to standard-

izing terminology for the majority languages, while at the same time proactively locate, define and/or construct— as the case may be— relevant terms in local and minority languages.

Two outputs of this work are already available. The first is a working paper (CBNRM Net 2004) that models the use of English in cross-cultural settings on traditional environmental knowledge and natural resource

Collaboration between several people and institutions is necessary in order to advance this work and establish a joint programme of action.

management, analyzes the impact of this communication on local and minority cultures, presents a methodology for addressing these issues, and provides some preliminary data on translations between languages of select terms and words. The second is a number of dictionaries between English and select languages.⁶

In this initial phase the emphases is on identifying a set of core CBNRM and NRM-related terms and words, and providing translations for a large number of languages. One purpose for this is to facilitate comparisons across languages. The following two-way dictionaries of key terms in natural resource management are currently available: Arabic – French, Akposo (Togo, Ghana) – English, Akposo – French, English – Ewe (Ghana), English – French, English – Hassanya (Mauritania), English – Portuguese, English – Italian, English – Setswana (Botswana), English – Spanish, and Ewe – French. All the dictionaries are contributed by members of CBNRM Net. Further dictionaries are in the process of preparation, and contributions from CMWG, SLWG, TILCEPA and CEESP members are very welcome. We need to coordinate existing work (in particular work by TILCEPA), search for complementarity and synergy, and develop a joint programme of action.

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Notes

- ¹ For more on what CBNRM Net is and how it operates, see Soeftestad and Kashwan (2004), available on the CBNRM Net website at <http://www.cbnrm.net/library/documents/>.
- ² Keesing 1981:85.
- ³ See, for example, Daniels (1994), DeVito (2002), Fishbone (1985), Food and Agriculture Organisation of the United Nations (2003), Goody (1977), Goody and Watt (1963), and Littlejohn (2001).
- ⁴ Two examples of this are: (1) researching the traditional use of a particular plant, bird or animal, and (2) searching for ways of involving local or minority cultures in protecting species.
- ⁵ See, for example, Barnes (1972).
- ⁶ The paper and the dictionaries are available on the CBNRM Net website, at: www.cbnrm.net/members/papers.html and www.cbnrm.net/resources/dictionaries/, respectively. The paper is on a password-protected part of the site (non-CBNRM Net members are advised to write to mail@cbnrm.net to request membership).

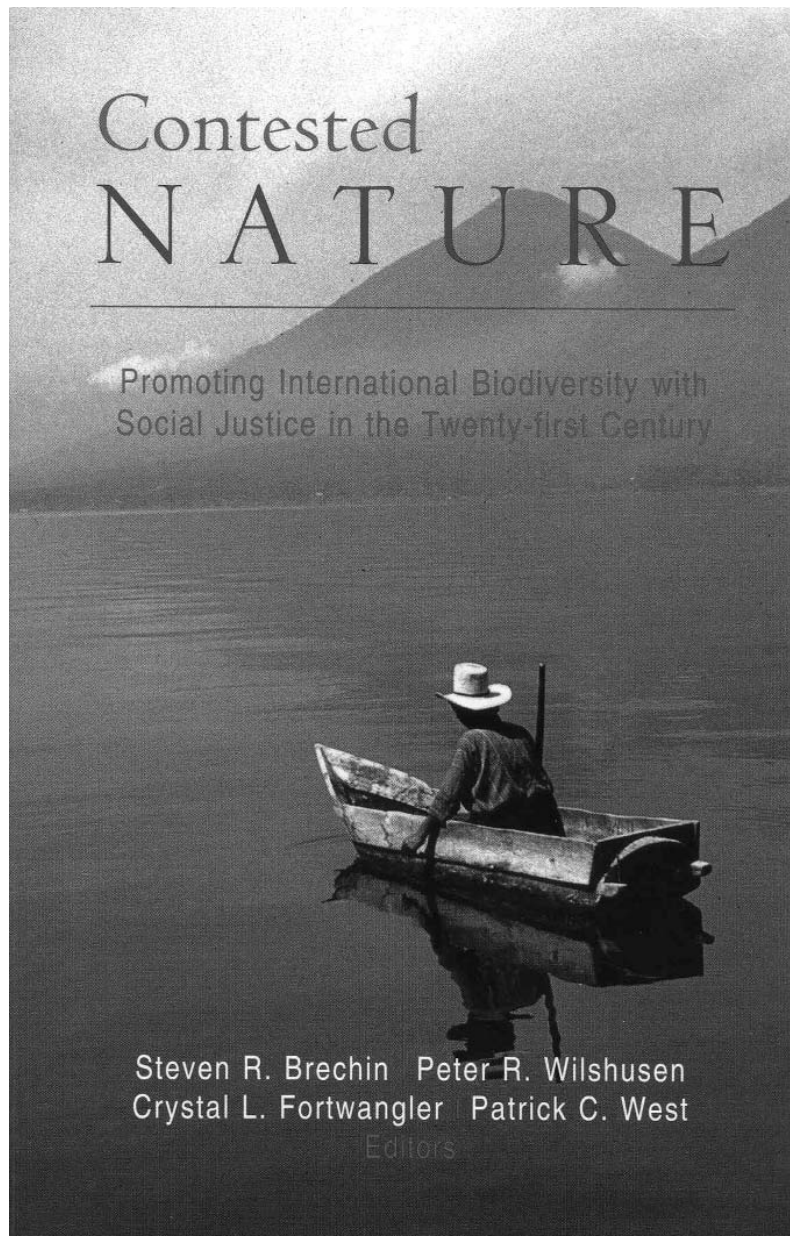
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Contested Nature – Promoting international biodiversity with social justice in the twenty-first Century

Edited by Steven R. Brechin, Peter R. Wilshusen, Crystal L. Fortwangler and Patrick C. West, SUNY Press, New York (NY, USA), 2003. 321pp.

Short review by Grazia Borrini-Feyerabend and Ellen L. Brown



If you care deeply about conservation and are baffled by the seemingly intractable human-related problems that impact it, if you believe that conservation should neither meddle with “politics” nor accept compromises, if you are dismayed at the merging of conservation and anti-poverty agenda... this is the book for you! You may not agree with everything you will read, but you will find a powerfully argued case *for conservation* through a rights and community-based approach. If, on the other hand, you already favour such an approach, then the book is also for you as it provides an intelligent compendium of the arguments supporting it—including a recent historical analyses of relevant concepts and initiatives in the international arena—and several inspiring case studies.

As it deals with fundamental rights and struggles for resource access and control, nature conservation is *de facto* a political endeavour. In other words, there are winners and losers in conservation, and *Contested Nature*—as the name implies—amply illustrates that. The volume makes an important contribution to the political ecology literature by presenting concrete approaches to critically re-thinking conservation initiatives and institutions, and inviting conservationists to seriously consider the wide-reaching impacts of their work. The volume examines the pervasive “hegemony” of conservation thinking, and how “cultures of control and resistance” have remained stable through colonial and post-colonial eras and regimes. Chapters take the reader from Mexico to Madagascar showing that conservation success depends upon human organisation and institutions and that the roots of conservation failures or successes lay in the social arena. They also show how resource-use rights are rooted in state, market, religion, ethnicity and family practices. Unfortunately, the socio-political aspects of biodiversity protection have been neglected in conservation policy and practice, and conservation with equity is the “road less travelled”. So-called “integrated conservation and development projects”, for instance, are rightly described as having focused on incentives and compensation as means of buying constraint—a very poor model indeed, when natural resources depend on and affect all aspects of human life, from the symbolic to the political. The acute need to learn from positive cases and scale up to other contexts and sites is stressed by *Contested Nature*, which, in addition to case studies, offers con-

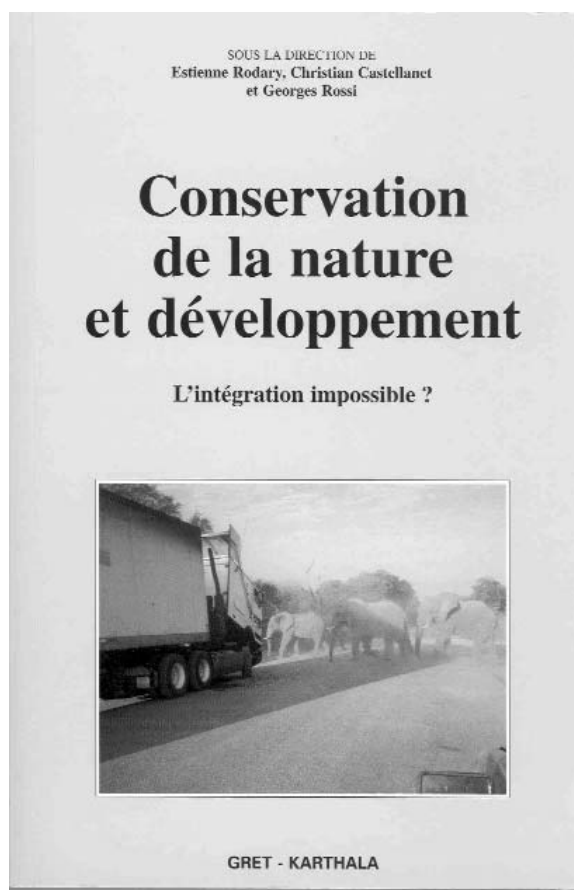
ceptual chapters and analyses. The authors are concerned with governance processes across scales and powerfully argue that the history, social identity and “amount of power” possessed by people are crucial determinants of their relationship to conservation. Through deliberative democracy and an emphasis on dialogue, collaboration, accountability and adaptive learning, this book powerfully argues what many of us long to hear—that we can, indeed, pursue a future that is ecologically sound and socially just.

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Conservation de la Nature et Développement— L'intégration impossible?

Sous la direction de Estienne Rodary, Christian Castellanet et Georges Rossi,
GRET-Karthala, Paris, 2003. 308pp.



Revue par Jacques Grinevald

A l'origine de cet ouvrage collectif sur la réintégration de "la conservation de la nature" dans les pratiques de développement, qui réunit une vingtaine d'auteurs chevronnés, il y a, comme c'est souvent le cas, un colloque, en l'occurrence les deuxièmes rencontres "Dynamiques Sociales et Environnement : pour un dialogue entre chercheurs, opérateurs et bailleurs de fonds", organisé à Bordeaux les 8-10 septembre 1998 par l'AFVP, la Banque Mondiale, le GRET, l'IRD, le Ministère de la Coopération, REGARDS (CNRS-IRD) et l'Union Européenne. Les principaux animateurs, notamment Estienne Rodary et Christian Castellanet, travaillent avec le GRET (Groupe de Recherche et d'Echanges Technologiques), une ONG française (@gret.org) bien connue des milieux de la recherche-action participative. Le long délai entre ce colloque et la parution du livre constitue, heureusement, non une dégradation entropique associée à l'usure du sujet ou des auteurs, mais un travail de maturation et d'amélioration qui tient compte de l'actualité croissante de cette problématique de plus en plus désignée sous le vocable - en soi très controversé - de "développement durable" (traduction française officielle de *sustainable development*).

Dans le vaste débat que suscite le concept de développement durable, écologiquement et socialement soutenable, et qui fait l'objet d'une littérature et de pratiques très inégales, pour ne pas dire contradictoires, cet ouvrage offre des perspectives théoriques et des analyses de cas concrets essentiellement du point de vue de l'évolution historique et conceptuelle de ce qu'on appelle la conservation. L'influence anglo-saxonne l'a emporté sur les premières formulations européennes: ce détail - qui est plus qu'un détail - est illustré par l'histoire de l'UICN (Union Internationale pour la Conservation de la Nature et de ses Ressources - aujourd'hui Union Mondiale pour la Nature) qui ne prit ce nom qu'en 1956, car la Conférence de Fontainebleau, en 1948, sous les auspices de l'UNESCO (dont Sir Julian Huxley était le premier Directeur

Général), du gouvernement français et de la Ligue Suisse pour la Protection de la Nature (créée en 1909), donna naissance non à l'UICN mais à l'UIPN, l'Union Internationale pour la Protection de la Nature. Le changement de terminologie était aussi un changement de mentalité et la fin de la belle époque coloniale!

Il est dommage que les auteurs de *Conservation de la Nature et Développement* ignorent l'histoire de l'UICN (*The Green Web : A Union for World Conservation*, IUCN, Earthscan, London, 1999) récemment publiée par Martin Holdgate, le Directeur Général de l'UICN de 1988 à 1994. Elle est à méditer. Le livre de 1981 de Robert Boardman (*International Organisation and the Conservation of Nature*), cité par Rodary et Castellanet est excellent, mais il date et n'a pas bénéficié du talent et de l'immense expérience de Martin Holdgate. Depuis Holdgate, cependant, le monde de la conservation a aussi beaucoup changé, sous la pression de la montée en puissance des économistes du développement durable... ceux qui calculent le prix de tout et ne connaissent la valeur de rien, pour paraphraser Oscar Wilde.

Le lecteur peu versé dans la longue histoire de cette idée moderne de la conservation et de ses relations avec l'essor, au XXe siècle, de l'écologie scientifique (traitée ici très sommairement), trouvera dans cet ouvrage de nombreux éléments pour une mise en perspective historique, mais avec une contextualisation qui fait curieusement l'impasse sur les réalités géopolitiques et stratégiques de la guerre secrète pour les matières premières que se livrent les grandes puissances. La conservation, même "intégrée" et "participative", n'est-elle pas souvent menacée par la grande politique pétrolière internationale? Cette question de "l'espace comme technologie politique" est certes abordée par Gilles Kleitz mais d'un point de vue local, tout à fait justifié, et non dans la perspective des relations internationales à l'âge de la globalisation. L'ensemble des

contributions, qui sont toutes très critiques mais en même d'une bonne volonté incontestable (relativement optimiste, à mon sens, sur l'avenir des relations Nord-Sud) justifie amplement le sous-titre de ce volume, y compris son point d'interrogation : "l'intégration impossible?". Mais la puissance de la rationalité du calcul économique, actuellement au coeur des politiques de "croissance économique durable", est-elle réellement intégrée ici ? C'est au lecteur de répondre, car chacun lira sans doute ce livre, au demeurant très riche et très stimulant, à sa façon et à l'échelle d'observation et d'intelligibilité qu'il juge pertinent.

L'Introduction par Christian Castellanet et Estienne Rodary, dont le propos mériterait d'être développé dans un livre à part, retrace, à grands traits (parfois discutables d'un point de vue historiographique), "les trois temps de la conservation", avant et après la "Stratégie Mondiale de la Conservation" (UICN, WWF, PNUF, 1980), sans oublier le programme MAB (*Man and the Biosphere*) de l'UNESCO, issu de la Conférence de la Biosphère de 1968 (oubliée ici comme un peu partout, mais pas par Holdgate), en remontant, à juste titre, à l'époque coloniale. A la suite des recherches historiographiques hétérodoxes de Richard Grove, sans doute encore peu connues des praticiens de la recherche-action participative, Castellanet et Rodary ont raison de rappeler que c'est essentiellement "la rencontre des Européens avec les tropiques" qui suscita "les premières préoccupations écologistes". L'écologie— plus que l'environnementalisme— est née sous les tropiques! La question des îles, dès la fin du XVIIIe siècle, a attiré l'attention des voyageurs naturalistes et de certains administrateurs coloniaux, sans oublier, aimerais-je ajouter (puisque l'île Maurice est mentionnée), un Bernardin de Saint-Pierre (1737-1814), l'auteur de *Paul et Virginie* et du *Voyage à l'île de France*. Ceux qui s'intéressent aux délicates applications des modèles de la biogéographie insulaire—depuis la fameuse "*Theory of Island Biogeography*" de MacArthur et Wilson

(1967)—doivent se reporter à la littérature spécialisée en biogéographie, domaine scientifique actuellement très actif sur lequel *Conservation de la Nature et Développement* semble passer comme chat sur braise, comme si la gestion de la conservation pouvait se passer de fondements scientifiques (voir les remarques finales du grand livre du professeur Jacques Blondel, *Biogéographie. Approche écologique et évolutive*, Masson, Paris, 1995).

L'écologie, en tant que science de la nature vivante, est née à l'extérieur des laboratoires considérés comme les nouveaux temples de l'humanité civilisée par Claude Bernard et Louis Pasteur (et les biologistes moléculaires). Elle a été largement inspirée par la rencontre des naturalistes européens avec la "géographie des plantes" (Humboldt, 1805) des régions tropicales, dont le grand Alexandre de Humboldt transmit au jeune Charles Darwin, parti faire le tour du monde à bord du *H.M.S. Beagle* (1831-1836), à la fois son enthousiasme pour la splendeur des forêts tropicales, véritables "monuments" de la Nature (désormais menacés par le développement!), et les prémisses de sa problématique qui devait radicalement transformer— avec quelle difficulté!— la conception classique de l'Histoire Naturelle et ouvrir à l'humanité les chemins de la découverte de "la sélection naturelle", l'une des clés de la compréhension de l'évolution biologique, dont l'espèce humaine est également solidaire, n'en déplaise à l'anthropocentrisme de la "modernité" urbano-industrielle et de ses racines religieuses médiévales (voir le débat sur la célèbre thèse de Lynn White). Ce commentaire, je l'avoue, est assez personnel, car la plupart des auteurs de cet ouvrage se gardent généralement d'entrer dans ce genre de considérations sur les rapports entre l'humanité, en tant qu'espèce zoologique singulière, caractérisée par une fantastique capacité cognitive et inventive autant qu'adaptative, d'où résulte sa diversité culturelle immémoriale (désormais menacée par le développement!), et ce qu'on appelle, depuis le milieu des années 1980, la crise de la biodiversité. Cette crise

va, de plus, être accélérée par le réchauffement planétaire : on ne peut plus traiter ces deux aspects de la crise écologique planétaire qui s'annonce comme s'il s'agissait de deux choses radicalement différentes. Ce que font, hélas, trop souvent les Français. Le texte de Georges Rossi, cependant, s'approche de ce genre de questionnement philosophique : il est précisément intitulé "Questions d'incertitude".

Les rapports entre la biologie de la conservation, cette "science de la rareté et de la diversité" comme l'appelle Michael E. Soulé (que personne ne cite ici!), et les controverses dans le domaine fondamentale de la systématique et de la biologie évolutive sont, à mon goût, trop peu traités, comme l'atteste aussi l'absence de référence au thème de la symbiose, dont le renouveau épistémologique doit beaucoup à Lynn Margulis, significativement coauteur de la théorie Gaïa, qui constitue, avec l'écologie profonde (*Deep Ecology*), un défi intellectuel majeur pour nos mythes modernes du développement, et aussi de l'environnement. C'est toute notre conception occidentale de la Nature qui est à revoir! Cela dit, les dérives de l'approche « éco-gestionnaire » sont bien analysées dans ce livre, sur des cas concrets, et notamment dans le texte court mais dense de Denis Chartier et Bernard Sellato intitulé "Les savoir-faire traditionnels au service de la conservation de la nature ou des ONG internationales d'environnement?" (p.89-104). On appréciera d'autant plus cette contribution que Chartier est l'auteur d'une thèse de doctorat en géographie sur "Le rôle de Greenpeace et du WWF dans la résolution des problèmes environnementaux", qu'on aimerait bien voir publiée.

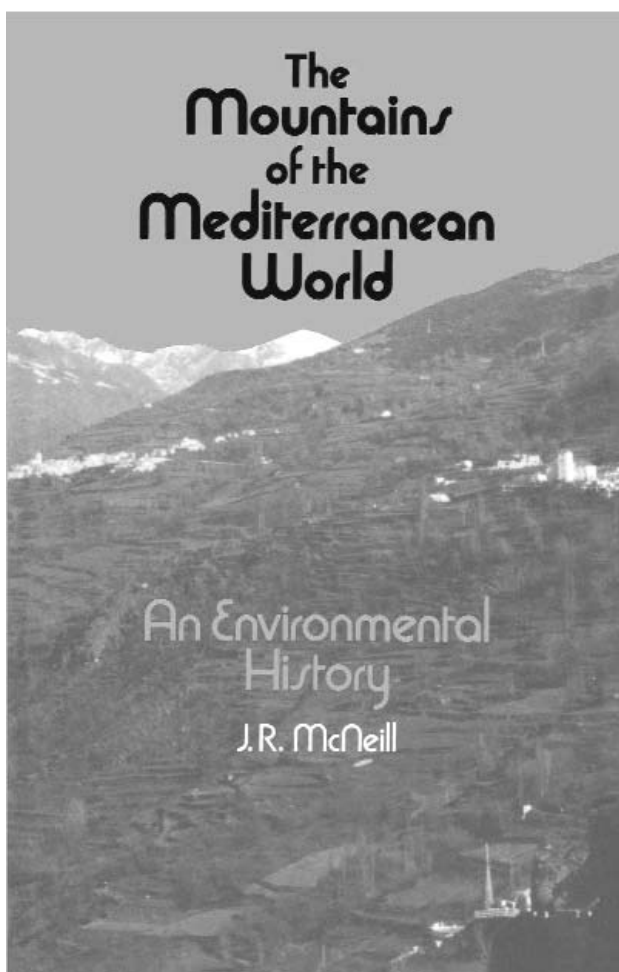
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The Mountains of the Mediterranean World— An environmental history

By John Robert McNeill, Cambridge University Press, Cambridge (UK), 2003. 423pp.

Short review by David Pitt



It is good to see that McNeill's classic study of Mediterranean mountains, originally published in 1992, is now in paperback. Braudel famously said that the mountains came first in the Mediterranean, tumbling into that azure sea, emerging as high islands like Crete or Corsica, even once being all the land before the Flood raised sea levels. This book is yet another good addition to the Cambridge series on Environment and History which also includes Alfred Crosby's *Ecological Imperialism*.

McNeill wants to explain why the Mediterranean mountains are so denuded and dry today. This is a first class mystery story based on archival research (including the FAO) and extensive wanderings in five ranges: the Taurus (Turkey), Pindus (Greece), Lucanian Appenines (Italy), Rif (Morocco) and Alpujarra (Spain). Once, these mountains were so forested that Tamerlane could hide elephants in them and the good and great flocked to the cooler

orchards and gardens away from the foetid malarial swamps.

Meiggs— the long haired Oxford don and doyen of ancient historians who had conclusively shown that the Mediterranean mountains had been a boreal environment just two thousand years ago— inspired McNeill to explain the deforestation over tea on the Balliol lawn. What had changed was not only, or mainly, the physical geography but the political economy, culture and society of the region. The Romans might have started the rot, for they (like the modern mafia) were suspicious of trees that could hide enemies of their authority. That's why the legions moved over the Alps on the broad passes and *alpages*, avoiding areas like the Jura (which is a pre-Roman word for forests). The Christians, for instance in the con-

quest of Moorish Spain, knocked down the delightful Arab gardens as well as the trees (destroying the silk trade in the process) to graze their bulls and, later, to bring in maize. But things really went wrong in the last two or three hundred years, as the Mediterranean became enmeshed in the capitalism of the industrial revolution and the highlands came under the power elites of the plains. The traditional self-reliant communities broke down and the young left the uplands to be exploited for wage labour. Those who stayed were very poor, overtaxed and forced to abandon nomadic ways. Certainly a growing population cut too much forest for fuel, unwisely cleared and planted maize, or tried to adopt a cash-based intensive pastoral economy. Often, however they ended up in debt or perpetual bondage. Only occasionally did they prosper, as when the Rif grew *kif* (cannabis) or from the spoils of brigandage and smuggling.

"Miseria" set in, but was in itself also something of a defence mechanism, as it persuaded authorities that villages were not worth taxing. At best, they could be used to exile political prisoners, like Carlo Levi who said that "Christ stopped at Eboli". Many children and closed kin groups were not "amoral familism" as Banfield and other anglosaxons thought, but a necessary means to independence where mechanisation was so difficult. They also were a sort of "revenge of the cradle", whilst polytheistic magic was the vessel in which traditional cultures and languages could be preserved. Even Islam had trouble incorporating the residents of the Rif, who managed to persuade the Sultan to give them a special dispensation to continue to make and drink alcohol. Mountain lawlessness became often open rebellion as local peoples sought independence or, more prosaically, access to water as the droughts intensified.

Worst of all, says McNeill, the environmental degradation became irreversible through vicious cycles— too much erosion, silt and floods, too thin a soil, too many fires and deserts, and so on. Ecological overshoot combined with climate change rendered the environment drier and drier— a tinder box constantly at risk of igniting, physically and socially, leading to regional if not world wars. Tragedy for the Mediterranean... but McNeill warns this may also be the fate of other regions where similar stories are sadly, if more slowly, unfolding, whatever the superficial differences of religion, society and culture.

More on this book from Lorena Verdes at Cambridge (phone 0044 1223 325921).

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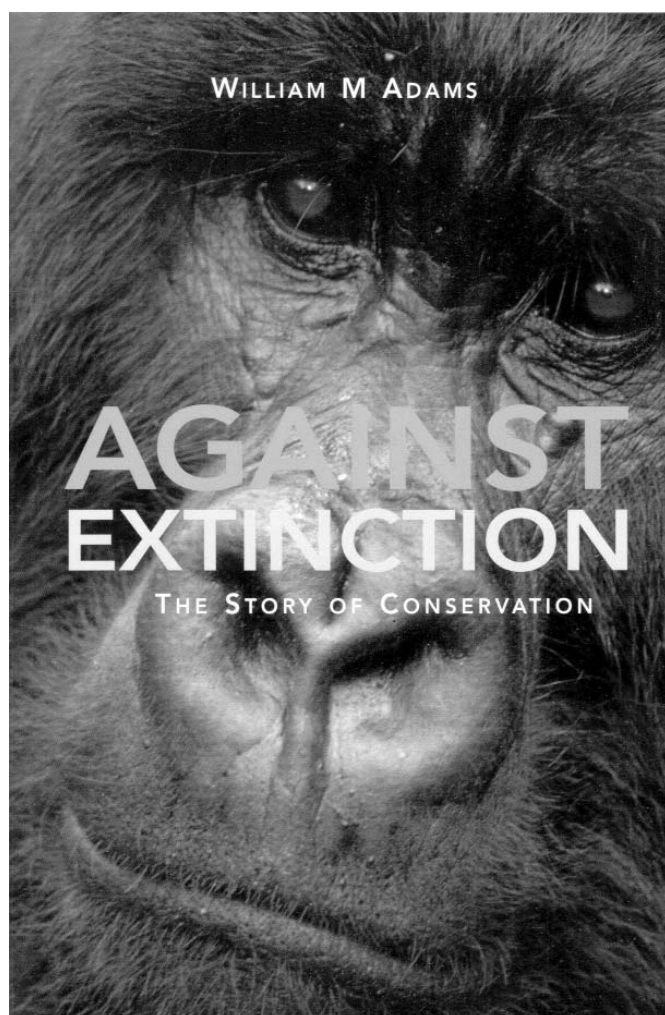
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Against Extinction— The story of conservation

By William M. Adams, Earthscan and Fauna and Flora International, London and Sterling (Virginia, USA), 2004. 311pp.

Short review by Dan Brockington



Bill Adams has once again challenged and strengthened conservation's cause with his latest book. Building on the success of previous publications on environmental strategies in the North and South (Adams 1996; Adams 2001) this book tells a story as yet remarkably untold— that of western conservation in the twentieth century. "Western" conservation, of course, happens in many other places apart from the West, and Adams is principally concerned with Africa, the UK and USA. His focus is the activities of what is now called Fauna and Flora International and the volume is also a contribution to the FFI's centenary.

Against Extinction charts the rise and diverse experience of different strongholds of conservation— protected areas and species preservation. It also examines newer trends in conservation activity including attempts to make protected areas locally popular and to raise revenue from sustainable harvests, as well as the origins of conservation activity in hunting and international lobbying, from the early days of the Society for the Preservation of the Fauna of

the Empire to the international debates about sustainable development.

It is the final chapter which deserves special mention. It is here that Adams concentrates on what he would like to see conservation doing, and in particularly doing differently. Here are the strongest challenges for the conservation movement. Adams advocates recognizing that nature is a 'social construction', as well as recognizing the diversity of human engagements with nature (page 233-4). His most powerful plea is "not to preserve... 'the wild', but peo-

ples' *relationships* with the wild" (page 235 original emphasis). His call is to move away from focusing on wilderness and pristineness, and to seek renewed connections with nature and natural processes, even in mundane landscapes, that could form the bedrock of a stronger conservation movement. If nature is confined only to special places then engagement with it will be shallow, short and superficial for most of us.

Some conservationists might hold that to be a counsel of despair, a succumbing acceptance of a marred world. It is not. This is a bolder agenda than merely drawing lines in the sand around protected areas. This is about changing the way industrial and post-industrial society relates to nature, and ultimately, perceives itself. These arguments are all the more important given that they may be too late. People already relate to nature through the categories presented to them. Some of the strongest debates about nature in the west are those which seek to preserve categorised wilderness from human use. The *Disneyfication* of nature and wilderness has been successful, and is now working out the ramifications of its success in western society (Adams 2003; Igoe 2003). Similarly few contend that the images of wild Africa sustaining conservation are not mythical, yet these stories still work, raising billions of dollars for conservation organisations (Brockington, 2002).

This is a brave book, for it is bound to challenge most of its readers, and offend others. Adams does not dilute the ill-effects of conservation practice. He has no time for the strongly protectionist arguments of Terborgh ('ecofascism' – page 223). Nor does he bow to fashionable, but unsupportable, notions that there is no crisis, that protected areas have been superseded, or that community

conservation provides the answer. Adams tries to please neither radical critics of conservation nor traditional conservationists. In telling this history he denies aspects of both sides with his usual eloquent prose. Few readers, therefore, will find comfort here. Nor should anyone expect to, for the story of conservation, of its rise and 'nature's decline' (page 231) cannot make comfortable reading. It is precisely because it requires confrontation that this is essential reading.

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Anthropology and History in Franche-Comté— A critique of social theory

By Robert Layton,
Oxford University Press, Oxford (UK) 2000. 392 pp.

Short book review by David Pitt

This study, based on fieldwork extending over 25 years and archival research, is an outstanding analysis of community development in the plateau region of the Jura Mountains, on the Franco Swiss border. Despite many often massive disruptions to life—plagues, earthquakes, the French revolution, wars, Nazi occupation, and lately even the market and globalisation— these villages managed to survive, indeed prosper, while their population remained at stable levels from the sixteenth century to the present day. How was this achieved? To answer the question Layton calls on both his acute and detailed field notes and a few big theoretical guns, such as Marx, Giddens and Bourdieu. Many of the reasons have to do with independence. People in these parts say they are not French (or Swiss) as much as Jurassian. During the Thirty Years war of the 17th century the sinister grey eminence Richelieu ordered all the villages from Pontarlier to Salins les Bains (then not in France) to be razed. After this, villagers started the habit of burying their dead face down, to defiantly show their buttocks to the French lords. This strong sense of independence is reflected in communal self reliance and face-to-face, practical solidarity, nurtured in the villages for centuries and based on partible inheritance and sharing of “the commons”.

The largely dairy economy has always revolved around democratic cooperatives. The first of these actually dates back to the 13th century, probably among the oldest in

the world. Layton contrasts this successful evolution with other villages in Europe, and especially in England where unigeniture was the rule and landlords enclosed common lands, dis-possessing and exploiting the peasantry who were reduced to lowly labour. In very recent times the villages have changed with the arrival of heterogeneous wealthy secondary residents (though nothing like the massive invasion of the ski areas in the High Jura) and the automobile. Today, people drive even within the village, have much fewer occasions to gossip and use their car to take advantage of lucrative jobs in Switzerland. Yet, tradition still holds together with what CIPRA has recently called the “*singularité plurielle*” of the mountains, accommodating many cultures and coping with the currents of history. This book provides a guide to learning from independent communities— places that have developed from the grass roots in a context of cultural pluralism and the constant adaptation of both individuals and institutions.

...survival stories from the Jura...

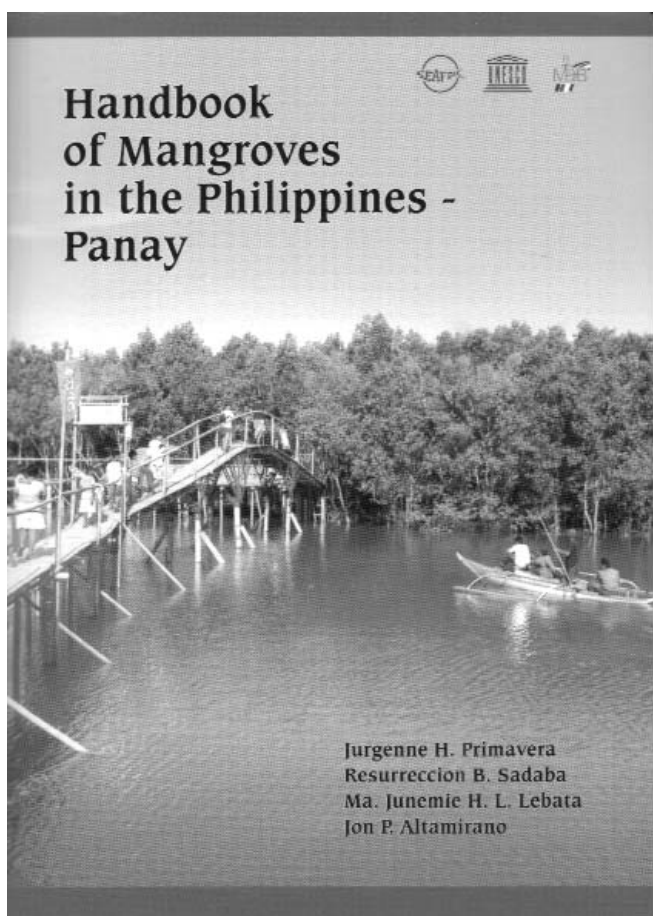
David Pitt (dpitt@freesurf.ch) is a member of CEESP/ CMWG and lives in the Jura.

For more on the book, including 40 pages of free sample, go to www.oup.com. For more on mountain cultural pluralism see the March 2004 special issue of CIPRA Info www.cipra.org from the *Commission Internationale pour la Protection des Alpes* based in Schaan FL.

Handbook of Mangroves in the Philippines

By Jurgenne H. Primavera, Resurreccion B. Sadaba,
Ma Junemie H.L. Lebata and Jon P. Altamirano,
Panay—SEAFDEC Aquaculture Department, Iloilo
(Philippines), 2004. 106 pp.

Short review by Lawrence Liao



The little-known world of Indo-Pacific mangroves has never been so wonderfully celebrated in such a compact field guide. This volume overflows with useful information as it describes and illustrates thirty-four species of mangroves, representing virtually the entire Philippine mangrove flora and about half of the world's known true mangrove species. Each species is depicted on easily readable opposing pages characterised by a refreshing layout of color photos, maps, icons and text that is pleasant to the eyes. Superb photography for each species includes shots of habitat, close-ups of leaves, flowers, fruits, and root systems which greatly facilitates field identification. Maps show sampling sites around Panay Island while graphic tidal range indicators plot the species' distribution in relation to the mean high water level at spring tide. Phenological time lines indicate flowering and fruiting periods for each species. Innovative icons provide quick information on plant form and root type, flower arrangement, inflores-

cence, leaf type and arrangement, shapes of leaf, its margin, apex and base. The text contains information on family, scientific and local names, morphological, ecological and ethnobotanical data.

While individual species descriptions take up the bulk of this handy field guide, the authors provide equally interesting and useful information on the economic importance of mangroves, citing historical and present usage. The current pattern of mangrove decline, so prevalent in Southeast Asia, is discussed with an emphasis on the Philippine situation.

This decline is continuing, notwithstanding the plethora of local laws enacted for their protection. On the bright side, the



authors argue for mangrove rehabilitation by providing narrative examples of successful mangrove conservation programs at the village level. The authors also draw from their extensive experience to support mangrove-friendly aquaculture practices as an alternative to the outright destructive conversion of mangroves into fishponds. The chapter closes with inspiring examples of community-based mangrove reforestation initiatives undertaken by government, academe, NGOs and people's organisations. A list of references is provided for those who want to obtain additional detailed information, while a glossary of technical terms is appended for consultation by laypersons.

This is definitely the best and most user-friendly mangrove field guide ever published in the Philippines. Compared to its predecessors, this book is comprehen-

sive without the pitfalls of being overly technical. It is highly recommended for a wide readership ranging from experts to

the uninitiated. Here at long last is a book highlighting an important topic long denied to naturalists, legislators, politicians, community extension workers and the layperson. With the renewed, heightened awareness of the fragile nature and ecological importance of mangroves succinctly portrayed by the authors,

mangroves in the Philippines stand to get a new lease on life. My only hope is that this valuable book reaches every audience that needs to hear its important message.

Lawrence Liao is Professor in the Department of Biology at the University of San Carlos in Cebu City (The Philippines).

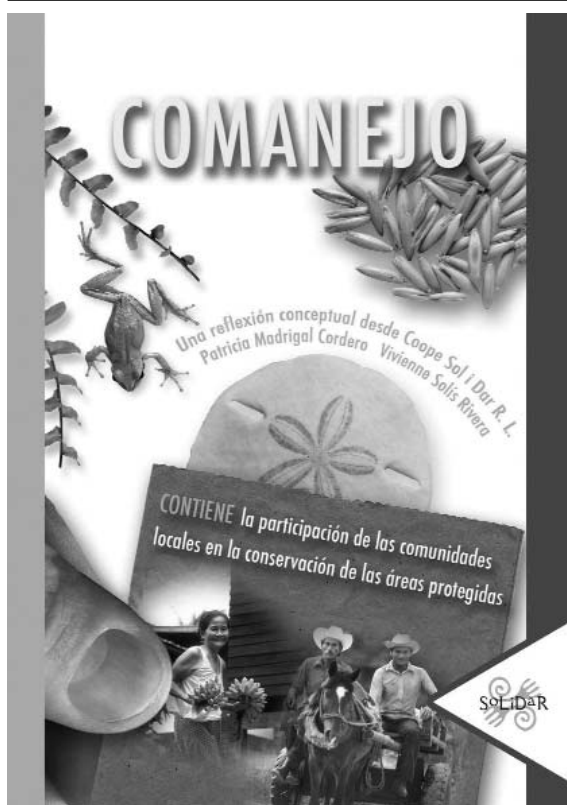
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Comanejo— una reflexión conceptual desde Coope Sol i Dar R. L.

Por Patricia Madrigal Cordero y Vivienne Solis Rivera, CMWG, TILCEPA, Universidad para la Paz, IDRC y Coope Sol i Dar R.L., San José (Costa Rica), 2004. 78 pp.

<http://www.iucn.org/themes/ceesp/Publications/CMWG/Comanejo.pdf>



Este documento tiene como objetivo el servir como un vehículo de información sobre la discusión que se ha dado a nivel global, regional y local en torno a la participación de diferentes sectores sociales en la conservación de las áreas protegidas. El volumen incluye conceptos en construcción, los cuales deben ser analizados desde la experiencia para su enriquecimiento. Es un documento para el análisis y la discusión, que aspira a ser enriquecido desde diferentes opiniones y perspectivas, pero que también ofrece la posición hasta ahora de quienes formamos parte de Coope Sol i Dar R.L. También el documento incluye en sus anexos los últimos acuerdos a los que se ha llegado en torno al tema en las discusiones del último Congreso Mundial de Áreas Protegidas en Durban y de las reuniones de la Convención de Diversidad Biológica (CDB).

Coope Sol i Dar R.L., is a cooperative made up of professionals from different disciplines engaged in fostering participatory governance of cultural and biological wealth

towards enhanced quality of life, justice and equity. "Co-management: a conceptual reflection from Coope Sol i Dar R.L." builds upon the renewed international interest in the role of local communities in the management of protected areas through innovative governance. It reviews relevant debates and emphasises the importance of recognizing the efforts done by local communities and indigenous people for the conservation of protected areas in Central America. The document strives to bridge global and Central American concerns and highlights the most applicable approaches in the regional context.

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Sharing Power— Learning by doing in co-management of natural resources throughout the world

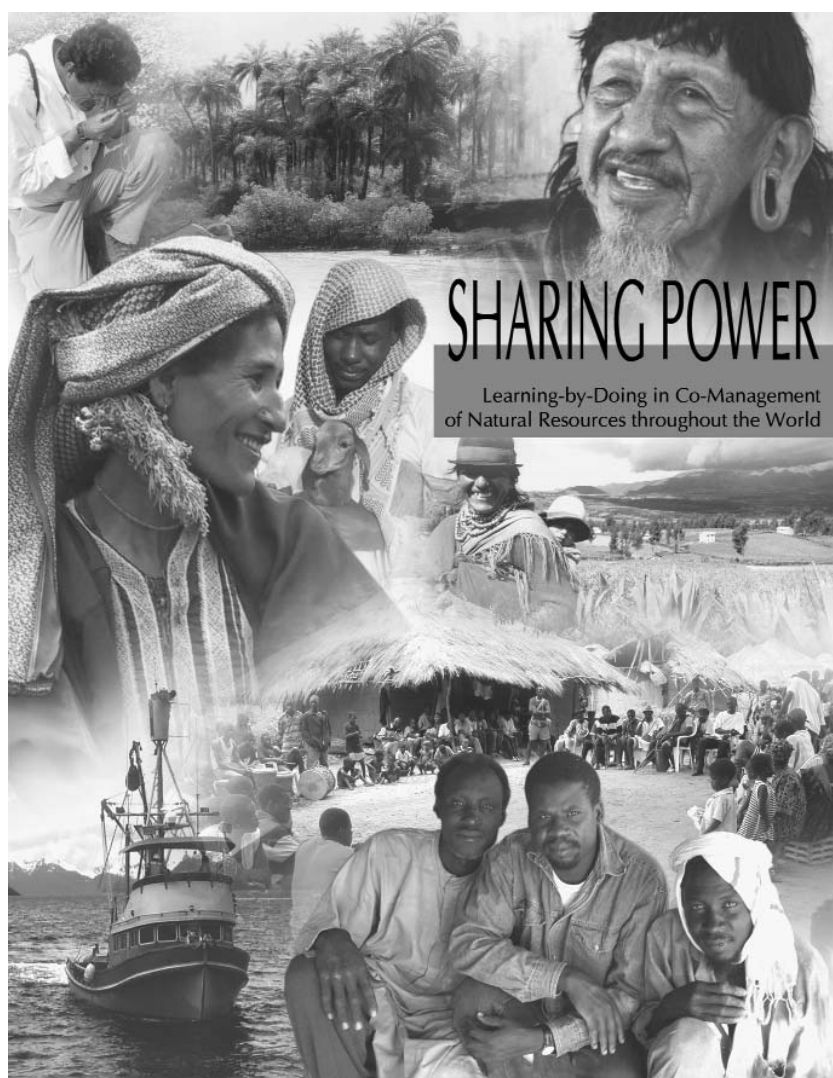
By Grazia Borrini-Feyerabend, Michel Pimbert,
M. Taghi Farvar, Ashish Kothari and Yves Renard,
IIED and IUCN/CEESP/CMWG, Cenesta, Teheran, 2004.
453 pp.

“Sharing Power” should be required reading for all of us involved in the governance and management of natural resources.... The lamp-posts are intelligence, care and equity—the exact opposite of situations in which the stronger forces impose their will on the weaker ones, without regard to understandings, results or even meaning, let alone sustainability.... This book invites us to, and equips us for, a dialogue among different cultures, being those of neighbours or of distant actors, in a respectful and equitable search for new forms of natural resource management.... You will find yourself consulting this book over and over again when you need inspiration and practical help...

*from the foreword by Juan Mayr
Maldonado*

At the heart of ‘co-management’

of natural resources is a process of collective understanding and action by local communities and other social actors. The process brings about negotiated agreements on management roles, rights, and responsibilities, making explicit the conditions and institutions of sound decentralised governance. De facto, co-management is about **sharing power**. When successful, it spells out the peaceful and intelligent ways by which communities



and other actors overcome environmental challenges, take best advantage of nature's gifts and share those in fairness and solidarity. When it fails, it ushers conflicts, human misery and environmental damages.

This book is designed to support professionals and citizens at large who both wish to better understand collaborative management processes and develop and enhance them in practice. It begins by offering a variety of vistas, from broad historical and equity considerations to in-depth co-management examples. The understanding accumulated in recent decades on starting points for co-management, pre-requisites for successful negotiations (such as effective social communication and internal organisation of the parties) as well as rules, methods and conditions of the negotiations themselves are illustrated in detail. Methods and tools, such as practical checklists distilled from different situations and contexts, are offered throughout. Examples of specific agreements and pluralist management organisations are discussed. The experience of social actors learning by doing and improving their management practices on an on-going basis is what informed this book— together with the complex and inspiring ways by which the surrounding socio-political conditions can be improved through participatory democracy.

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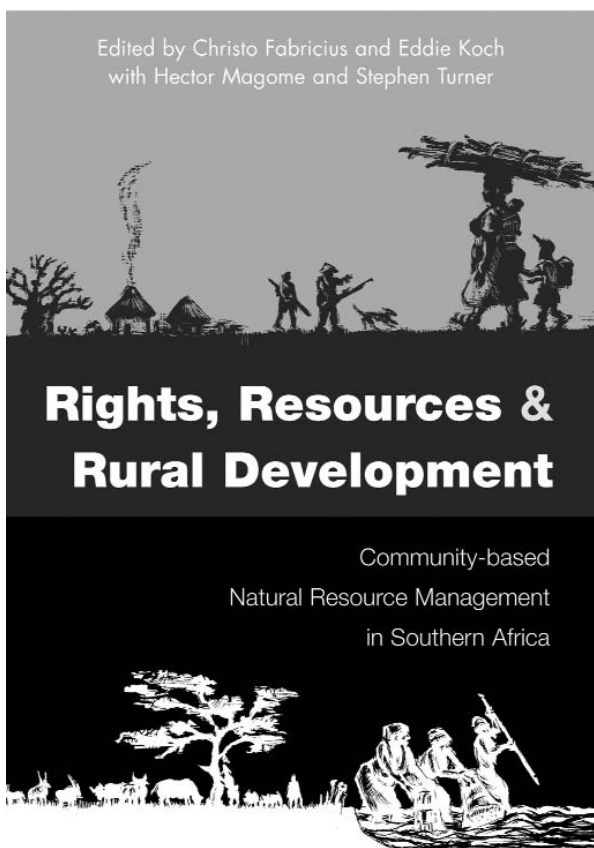
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Rights, Resources and Rural Development— community-based natural resource management in Southern Africa

Edited by Christo Fabricius, Eddie Koch,
Hector Magome and Stephen Turner,
Earthscan, London, 2004.

Community-based natural resource management (CBNRM) is an approach that offers multiple related benefits: securing

rural livelihoods while ensuring careful conservation and management of biodiversity and other resources. Recently, however, the CBNRM concept has attracted criticism for failing to realise its promises or deliver sig-



nificant local improvements in some contexts.

This book identifies the flaws in its application, which often have been swept under the carpet by those involved in the initiatives. It analyses them, and it proposes remedies for specific circumstances based on the lessons learned from CBNRM experience in southern Africa over the past decade.

The result is essential reading for all the researchers, observers and practitioners who have focused on how CBNRM can be employed in sustainable development programmes as a means to overcome poverty in various parts of the globe. It will be a vital tool in improving their methods and performance.

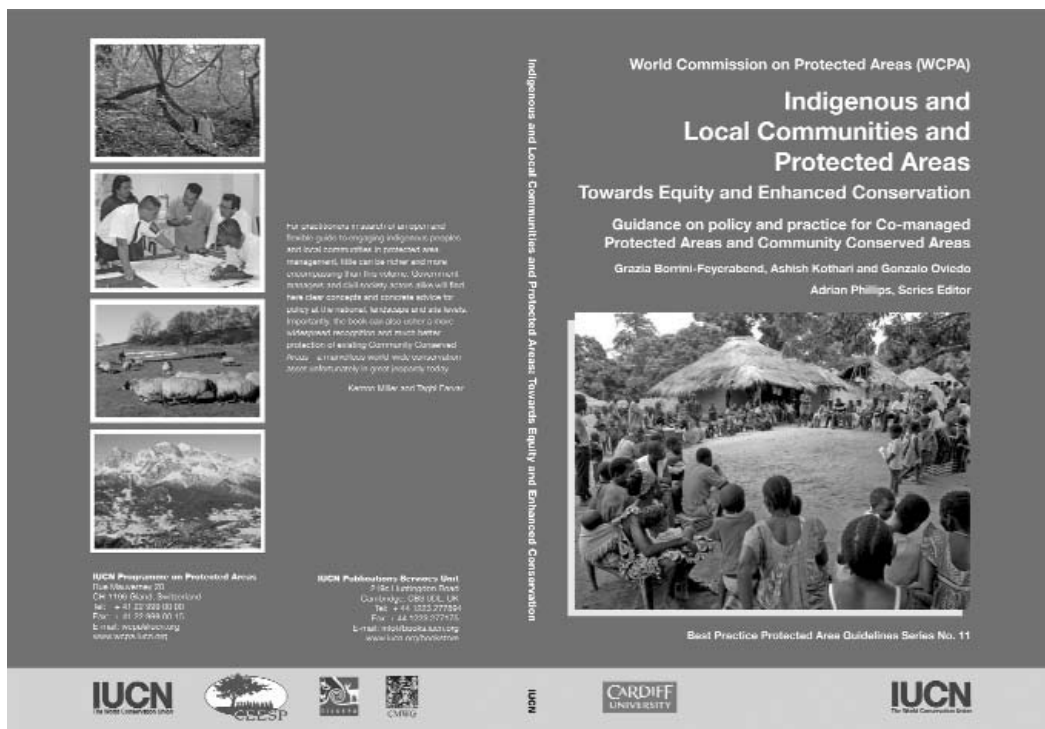
Christo Fabricius (C.Fabricius@ru.ac.za) is Professor of Environmental Science at Rhodes University, Grahamstown (South Africa) and a member of CEESP/CMWG and TILCEPA.

Indigenous and Local Communities and Protected Areas—towards equity and enhanced conservation. Guidance on policy and practice for Co-managed Protected Areas and Community Conserved Areas

By Grazia Borrini-Feyerabend, Ashish Kothari and Gonzalo Oviedo, with inputs from Marco Bassi, Peter Bille Larsen, Maurizio Farhan Ferrari, Diane Pansky and Neema Pathak, series editor: Adrian Phillips, Best Practice Protected Area Guidelines Series, No.11, IUCN/ WCPA and CEESP, Cambridge (UK), 2004. 112 pp.

Conventional approaches to managing

protected areas have tended to see people and nature as separate entities,



often excluding human communities from the use of natural resources and perceiving their concerns as incompatible with conservation. This has led to social costs for many indigenous peoples and local communities, with a variety of conflicts with important repercussions in both conservation and economic

terms. This volume—the latest in the WCPA Best Practice Protected Areas Guidelines Series—explores protected area approaches and models that see conservation, and protected areas of all categories, as fully compatible with human communities as decision-

Two key definitions used in these Guidelines

Co-managed Protected Area:

Government-designated protected area where decision making power, responsibility and accountability are shared between governmental agencies and other stakeholders, in particular the indigenous peoples and local and mobile communities that depend on that area culturally and/or for their livelihood.

Community Conserved Area:

Natural and modified ecosystems, including significant biodiversity, ecological services and cultural values, voluntarily conserved by indigenous peoples and local and mobile communities through customary laws or other effective means.

makers, managers, residents, resource users and caretaking neighbours. Main themes are **co-managed protected areas** and **community conserved areas**—which are discussed at some length and illustrated through typologies and numerous examples. Drawing on experiences, reflections and advice developed at the local, national, regional and international level, the volume offers practical guidance and specific options for action for conservation practitioners and policy makers.

The Guidelines build upon the IUCN's efforts to pursue equity in conservation in the decade since the term was first included in the IUCN mission statement (Buenos Aires, 1994) and upon the work of the IUCN Theme on Indigenous and Local Communities, Equity and Protected Areas (TILCEPA) – a joint Theme of the CEESP and WCPA Commissions. Much of this work was done in preparation for the Vth World Parks Congress in Durban (South Africa), September 2003. The Guidelines draw upon the outputs of that Congress

and discuss and refer specifically to the Programme of Work on Protected Areas approved by the 7th Conference of Parties to the Convention on Biological Diversity in February 2004 (CBD/COP7). The Parties to that Convention as well as indigenous people, mobile indigenous peoples and local communities concerned with protected areas in many countries, will find in this volume an important tool towards a successful pursuit of CBD's obligations.

Grazia Borrini-Feyerabend (gbf@cenesta.org) is Chair of CEESP/CMWG and Co-chair of TILCEPA. **Ashish Kothari** (ashish@nda.vsnl.net.in) is Co-chair of TILCEPA and a member of CEESP/CMWG. **Gonzalo Oviedo** (gonzalo.oviedo@iucn.org) is Senior Social Policy Advisor at IUCN Headquarters and a member of both CEESP/CMWG and TILCEPA. **Marco Bassi, Peter Bille Larsen, Maurizio Farhan Ferrari, Diane Pansky, Neema Pathak** and **Adrian Phillips** are all members of CEESP/CMWG and/or TILCEPA.

Community Integrated Pest Management in Indonesia— institutionalising participation and people centred approaches

By Mansour Faki, Toto Rahardjo and Michel Pimbert,
IIED-IDS Institutionalising Participation Series,
IIED, London, 2003.

Integrated pest management (IPM) emerged in Indonesia in the late 1980s as a reaction to the environmental and social consequences of the Green Revolution model of agriculture. A cooperative programme between the United Nations Food and Agriculture Organisation (FAO) and the Indonesian Government centred then on farmer field schools (FFS), which are schools without walls. The FFS were to make farmers experts in their own fields, enabling them to replace their reliance on external inputs, such as pesticides, with endogenous skills, knowledge and

resources. Over time, the emphasis of the programme shifted towards community organisation, community planning and management of IPM, and became known as Community IPM (CIPM). This study assesses the extent to which Community IPM has been institutionalised in Java (Indonesia). The dynamics of institutionalising people-centred, participatory processes were found to be closely dependent on the following mutually reinforcing factors: 1. Enabling national policy decisions by the state complemented by farmer-led attempts to contest and shape policies from below. 2. Actors with emancipatory values, attitudes and behaviours who championed

the cause of FFS/CIPM. 3. Farmer-centred learning and critical education that promoted ecological knowledge for sustainability, both among farmers and those who worked with them. 4. Enabling organisations that emphasised farmers' abilities promoted organisational learning and are flexible in their structure and procedures. 5. The existence of safe spaces where farmers can get together, share problems and decide on action (linking together these "safe spaces" and local groups into broader

federations has helped farmers capture power back from centralised, top down agencies). 6. A context where farmers have had some control over funding decisions and allocations made by local, national or international funding bodies.

Michel Pimbert (Michel.Pimbert@iied.org) is Acting Director of the Sustainable Agriculture and Rural Livelihoods programme at the International Institute for Environment and Development and a member of CEESP/CEMWG and TILCEPA.

State versus Participation— Natural resources management in Europe

By *Andréa Finger-Stich* and *Matthias Finger*,
IIED-IDS Institutionalising Participation Series IIED,
London, 2002.

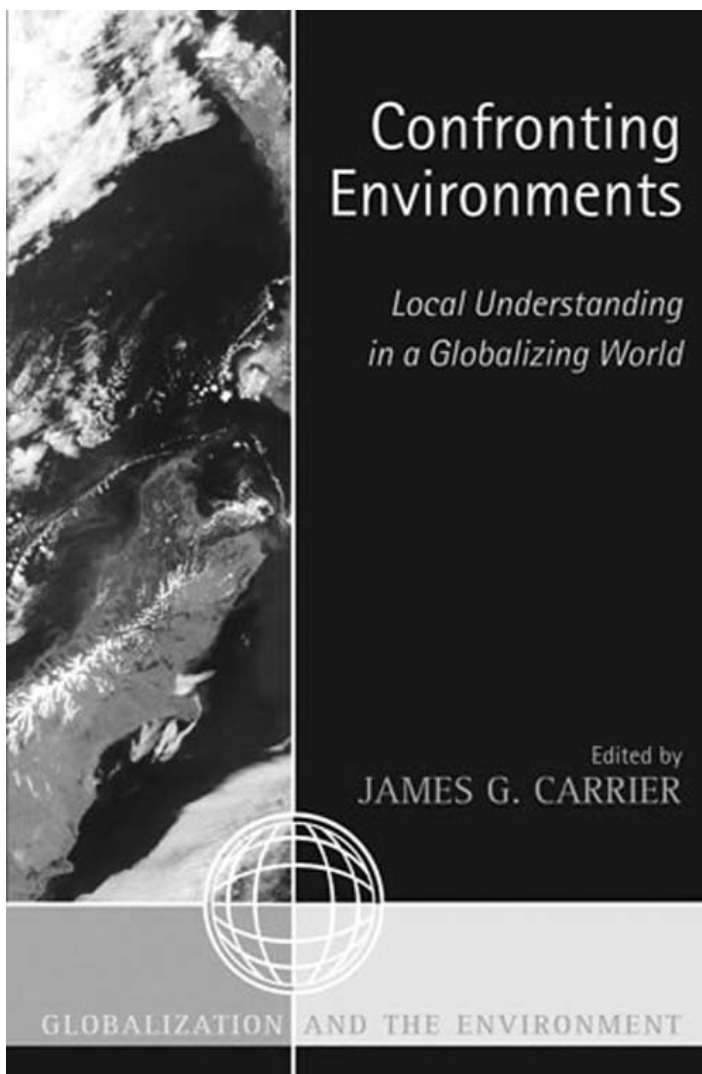
The participation of local communities, indigenous peoples, various other actors and the public in general in developing policies, planning and managing natural resources has been increasingly promoted in international and national policies. This book analyses and discusses how participation does—or does not—occur in the management of forest and water resources at various institutional levels in European contexts. More precisely, the authors critically analyse how the state has, over time, strengthened its own development interests by removing decisions over the management of natural resources from local users and the hands of communities and how, today, it attempts to instrumentalise peoples' participation to

increase its own legitimacy. This evolution is reviewed in light of two other recent trends, namely the globalisation of economic interests and the demands for democratisation, decentralisation, and accountability. The authors highlight the strategies used by various state agencies to control participation in decision-making processes relating to forest and water resource management.

Andréa Finger-Stich (Andrea.Finger@wanadoo.fr) is an independent consultant with interests focusing on participatory processes in forest management. She is a member of CEESP/CEMWG.

Confronting Environments— Local understanding in a globalizing world

Edited by James Carrier, Alta Mira Press,
Walnut Creek (California, USA), 2004.



The contributors, including CEESP member Ken MacDonald, tackle the complex factors affecting people's understandings of their environment—not just the natural environment, but landscapes shaped by humans, and their social contexts. The authors consider the impact of local events, such as tourism or environmental protection regimes, with detailed analyses of local cases. They also evaluate the large-scale political-economic forces that operate at regional and global levels, such as policies and bureaucratic requirements of international agencies and a country's position in global commodity markets. Their approach encourages policy makers and researchers to think about their natural and non-natural environment in novel ways. This book will be an excellent resource for all concerned with social, cultural and political-economic aspects of environmental use and conservation,

and researchers in anthropology, geography, and political ecology.

James G. Carrier is Adjunct Professor of Anthropology, University of Indiana and Honorary Research Associate, Department of Anthropology, Oxford Brookes University. **Ken MacDonald** (kmacd@utsc.utoronto.ca) is a member of CEESP/CMWG.

"Prajateerpu, power and knowledge: the politics of participatory action research in development.
Part 1: Context, process and safeguards"

by Michel Pimbert and Tom Wakeford,
Action Research, 1(2):184-207, 2003.

Prajateerpu (which literally means "people's verdict") has been devised as an exercise to allow the people who were going to be the most affected by the "Vision 2020" initiatives for food and farming in Andhra Pradesh (AP, India) to shape a vision of their own. This paper explores the *Prajateerpu* exercise as a case study in participatory action research that took place against a background of social, political and scientific controversy in which the authors were active participants. Having examined the different methods

involved in the *Prajateerpu* process—including the citizens jury, scenario workshop and public hearings—the authors assess the safeguards that were put in place to ensure a balanced and credible deliberative process. They suggest that the exchanges between the five organisations that formed the core team, the facilitators, oversight panel, witnesses and jurors in *Prajateerpu*, along with the use of a set of carefully designed safeguards, contain valuable lessons for those who wish to engage in collaborative inquiries dealing with high political stakes.

"Prajateerpu, power and knowledge: the politics of participatory action research in development.
Part 2: Analysis, reflections and implications"

by Tom Wakeford and Michel Pimbert,
Action Research, 2(1): 25-46, 2004.

The authors examine here the roles of the diverse co-inquirers involved in the power-equalising action research project

known as *Prajateerpu*. While privileging neither official expertise nor experiential knowledge, they point out the need to redress the power imbalance that exists between poor and elite social groups by

creating arenas where expert knowledge is put under public scrutiny. This second paper in a series of two emphasises the tensions that arose in *Prajateerpu* between the participants whose analysis had become marginalised from decision-making processes and those in positions of power. From a reflection on their own contributions as action researchers, the authors look at the merits of processes

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such as *Prajateerpu* towards more democratic knowledge and enhanced social justice.

ACM News from CIFOR

(<http://www.cifor.cgiar.org/acm/pub/news.html>)



CENTER FOR INTERNATIONAL FORESTRY RESEARCH

Malawi, Nepal, Philippines, Zimbabwe), and less formal relations with people elsewhere. Five years ago, members of this group began publishing a small internet newsletter on Adaptive Collaborative Management— ACM News— which served initially as a mechanism for sharing information within the group. Over time, others have expressed interest in receiving the newsletter, and it is now sent out to any interested readers.

The Center for

International Forestry Research (CIFOR) has been involved in adaptive collaborative management efforts since 1998. During that time a group within the Governance programme has established long term links with researchers and NGO personnel in 11 countries (Bolivia, Brazil, Cameroon, Ghana, Indonesia, Kyrgyzstan, Madagascar,



Although we still print some personal information about members of our network, each issue includes articles on new happenings and findings from various sites, new publications of relevance to those doing adap-

tive collaborative management, and new options for scaling up and out (expanding the approach and results to others). New readers are welcome, and invited to submit short articles on themes related to adaptive collaborative management and other governance issues.

For more information please contact **Carol Colfer** (c.colfer@cgiar.org) or **Lini Wollenberg** (L.Wollenberg@cgnet.com), who is also a CEESP/CMWG member.

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Policy Matters is the newsletter of the IUCN Commission on Environmental, Economic and Social Policy (CEESP). It is published at least twice a year and distributed to CEESP's 600 members, as well as the IUCN Secretariat and at conferences and meetings throughout the world. When possible, it is published concurrently with major global events as a thematic contribution to them and to the civil society meeting around them.

IUCN, The World Conservation Union, is a unique UNION of members from some 140 countries include over 70 States, 100 government agencies, and 800 NGOs. Over 10,000 internationally-recognised scientists and experts from more than 180 countries volunteer their services to its six global commissions. The vision of IUCN is "A just world that values and conserves nature".

IUCN's six Commissions are principal sources of guidance on conservation knowledge, policy and technical advice and are co-implementers of the IUCN programme. The Commissions are autonomous networks of expert volunteers entrusted by the World Conservation Congress to develop and advance the institutional knowledge and experience and objectives of IUCN.

CEESP, the IUCN Commission on Environmental, Economic and Social Policy, is an inter-disciplinary network of professionals whose mission is to act as a source of advice on the environmental, economic, social and cultural factors that affect natural resources and biological diversity and to provide guidance and support towards effective policies and practices in environmental conservation and sustainable development.

Following the mandate approved by the Second **World Conservation Congress** in Amman, October 2000, CEESP contributes to the IUCN Programme and Mission with particular reference to five thematic areas:

- Collaborative Management of Natural Resources (**CMWG**)
- Sustainable Livelihoods (**WGSL**, including poverty elimination and biodiversity conservation)
- Environment and Security (**WGES**)
- Environment, Trade and Investment (**GETI**)
- Theme on Indigenous Peoples & Local Communities, Equity, and Protected Areas (**TILCEPA**, joint between CEESP and WCPA)

Each issue of **Policy Matters** focuses on a theme of particular importance to our members and is edited by one or more of our working groups focusing on the five thematic areas. Past issues have focused on themes such as "Collaborative Management and Sustainable Livelihoods", "Environment and Security" and the Caspian Sturgeon, including issues of trade, conflict, co-management, and sustainable livelihoods for communities of the Caspian Sea ("The Sturgeon" issue). For more information about CEESP and to view past issues of **Policy Matters**, please visit our website: <http://www.iucn.org/themes/ceesp>.

CEESP is hosted by the Iranian Centre for Sustainable Development and Environment (**CENESTA**). For more information about CENESTA please visit <http://www.cenesta.org>.

Please send comments or queries to ceesp@iucn.org. We look forward to hearing from you!

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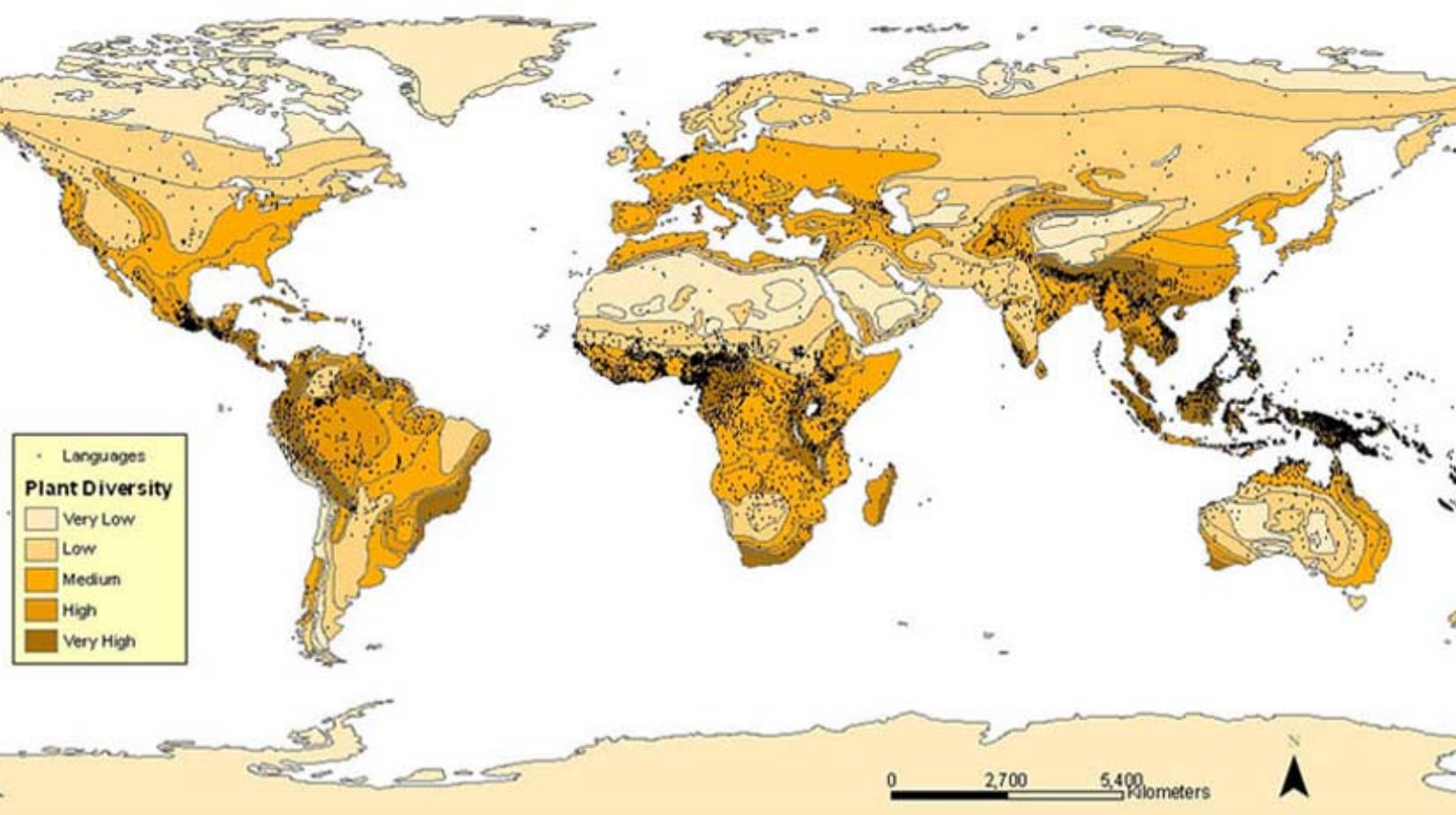


Figure 1 of article by Stepp et al., pages 267-270. Global Plant Diversity and Language Distribution

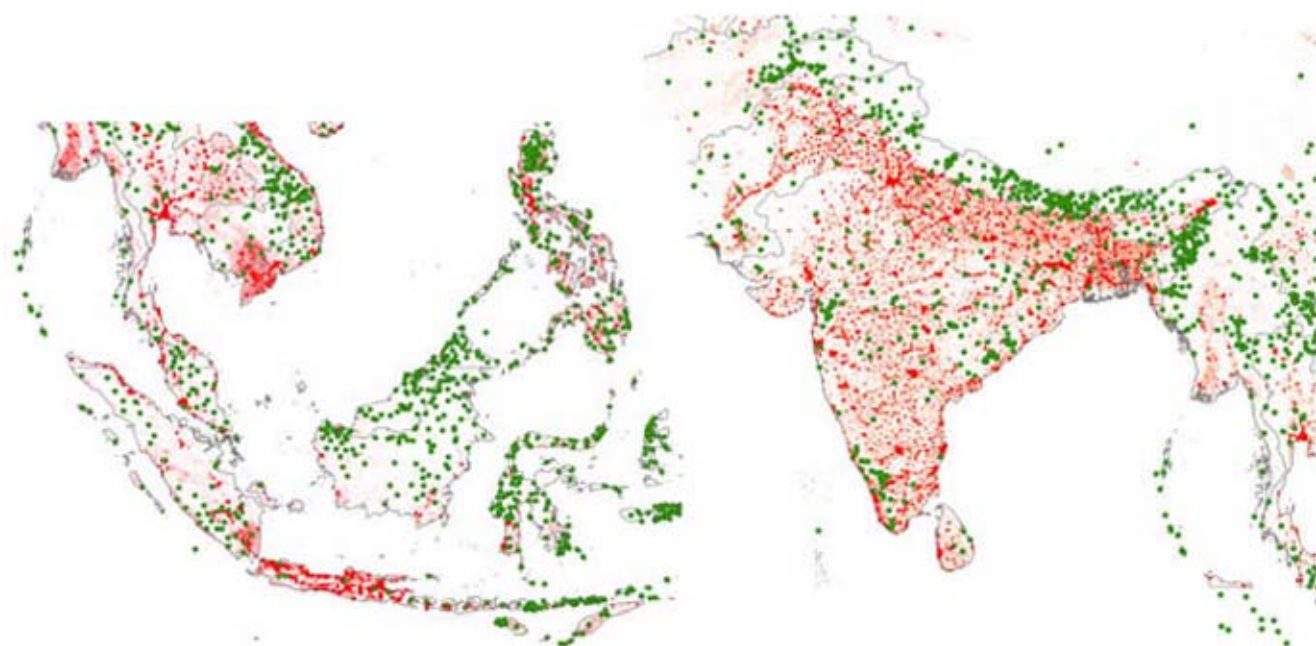


Figure 3 of article by Stepp et al., pages 267-270. Example of the high language diversity in low population areas (South Asia and Pacific region) (Green represents languages and red high population diversity).

Figure 4 of article by Stepp et al., pages 267-270. Example of the high language diversity in low population areas (Himalayas) (Green represents languages and red high population diversity)

INDIGENOUS AND TRADITIONAL PEOPLES IN THE WORLD'S TERRESTRIAL ECOREGIONS

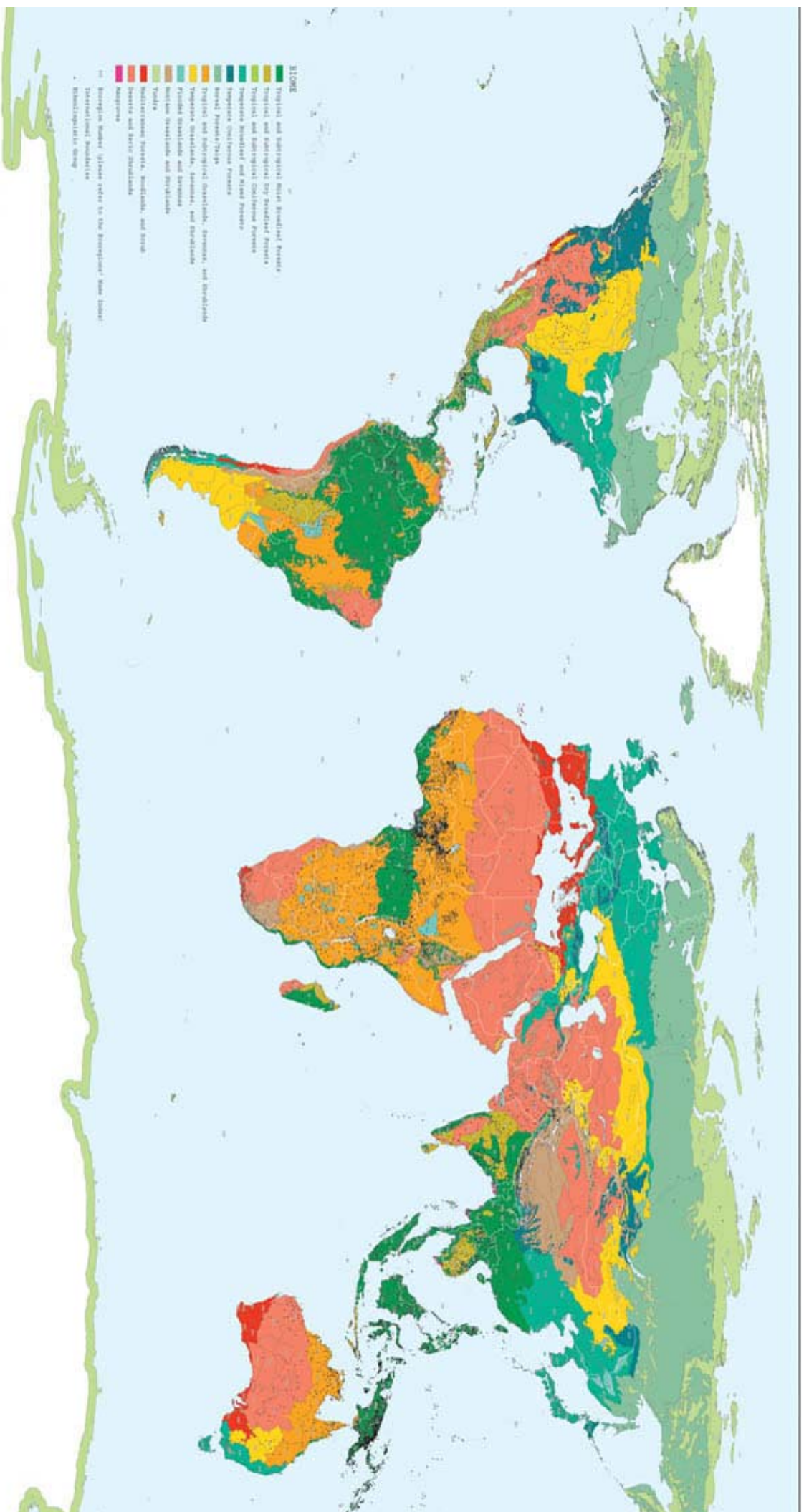


Figure 2 of article by L. Maffi, pages 256-266. Map of the world's major habitat types showing the overlapping distribution of the world's languages.

