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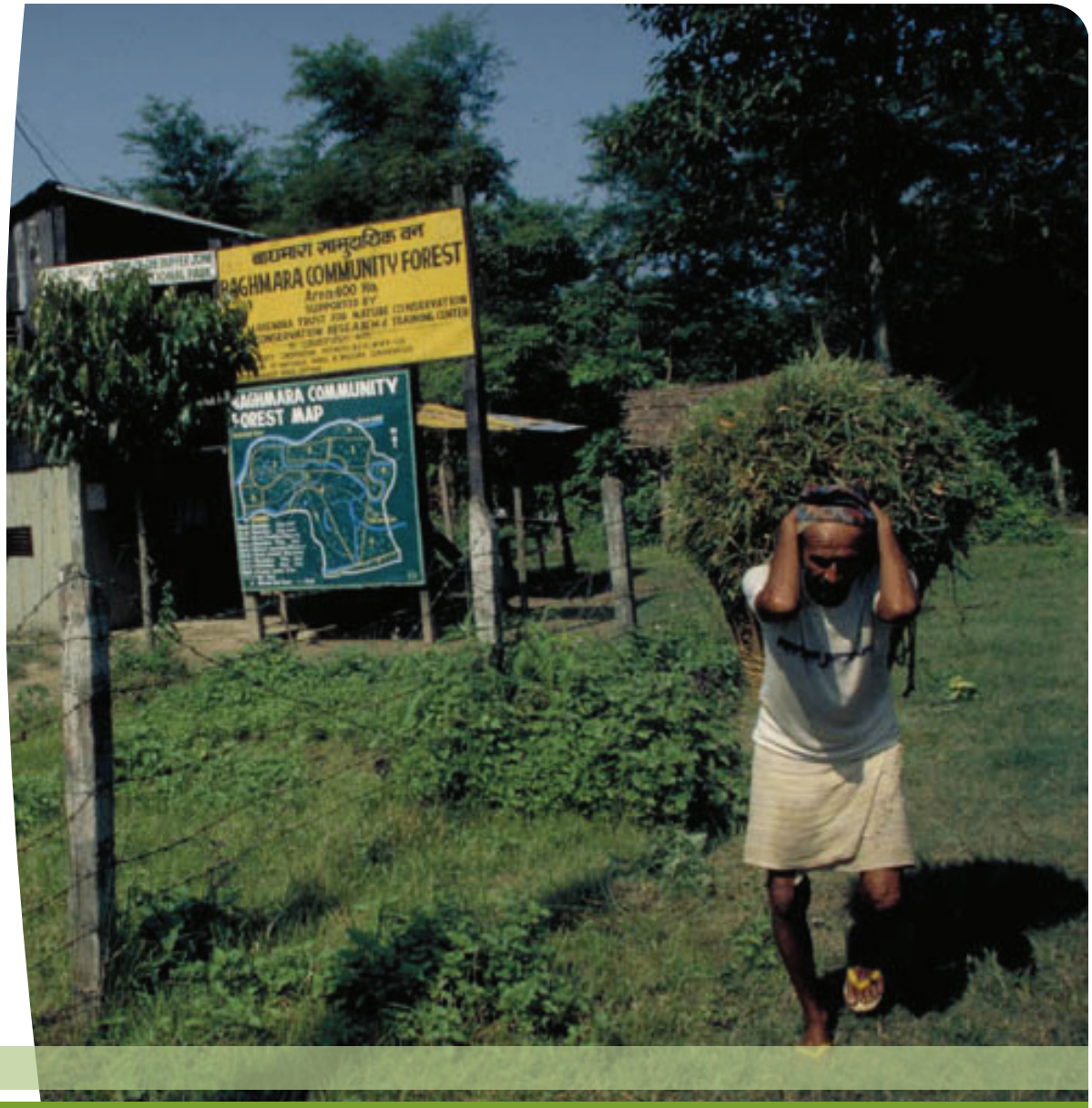

Local Rights and Tenure for Forests

Opportunity or Threat for Conservation?

THE RIGHTS AND RESOURCES INITIATIVE

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Local Rights and Tenure for Forests

Opportunity or Threat for Conservation?

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CONTENTS

INTRODUCTION: THE DILEMMA OF PRIVATE RIGHTS AND PUBLIC FOREST VALUES

Conservation organizations are becoming increasingly aware of the need to deal equitably with local peoples' rights to forest land and forest resources. "Rights-based" approaches to conservation are being widely promoted.[1] In many situations these "Rights-based Approaches" are evolving alongside major forest governance reform initiatives.

These two trends might be expected to seek similar goals – greater equity and certainty over who can use forests and for what purpose. The reality is that the processes of governance and rights reform are revealing underlying tensions between the needs to husband the local values of forests versus the need to conserve the so-called public goods values that accrue to society at large. Reconciling the trade-offs between local and public goods values will be a major challenge for resource managers in coming decades.

The end of the 20th Century saw a major focus on conserving global forest values through international agreements and conventions, soft law initiatives such as certification and site-based negotiations, often within the context of Integrated Conservation and Development Projects (ICDPs). These approaches are now losing support as international processes get bogged down in semantics and political correctness and lose credibility, and there is little empirical evidence that ICDPs deliver either international public goods or local development.

Classic field approaches to conservation are also being challenged. Government-sponsored protected areas and measures to counter perceived threats to pristine nature developed from a conservation paradigm that is no longer widely accepted. This classic approach is derived from the wilderness ethic of Old World settlers and explorers moving into forests and plains that they assumed to be in the condition in which god created them. This is now losing ground to a paradigm that recognizes that virtually all of the world's ecosystems have evolved under varying intensities of human use for millennia. We are moving from conserving the pristine wildernesses of a mythical "Edenic" past to nurturing values to meet the needs of societies of the future.

The actual conservation model that is still being imposed upon developing countries is essentially one from the late European colonial era of setting aside very large areas of forest with presumed minimal past disturbance from humans. In the "new world", this was best evidenced by conservation models that sought to preserve a primordial Amazon forest, not realizing that these forests were heavily cultivated by populations decimated by contact, leaving behind the deep black soils terra preta, that have become a reference point for the food sovereignty and climate change movement.[2] Curiously the domestic European model—small areas intensively managed to protect sharply defined biodiversity values set in a matrix of carefully managed multi-functional landscapes—is not being attempted in the developing world. This is a pity as this integrated approach may be exactly what is needed in emerging economies with land shortages and needs to increase production of food and commodities as well as the need to maintain biodiversity values.

The challenges of finding appropriate arrangements for forest ownership and use rights are not restricted to developing countries. In Western Europe forest ownership and rights have continually evolved for over a thousand years.[3] In England an exhaustive inventory of land and forest ownership and use was conducted in the 11th Century—the famous Domesday Book. Long before that inventory, forest lands had been subject to constant

changes in ownership and use.[4] Pogue Harrison[5] and Schama[6] have argued that the constant quest for equitable use of forest lands between the state and local people has been a major force in shaping human societies as we now know them. The relations between monarchs and the serfdom in Europe have revolved around questions of land, labor and forest use. As democratic processes have emerged, contentious issues of forest tenure have been subject to court rulings that constitute a large body of case law and have fuelled constant revisions of formal bodies of legislation. Most governments now place restrictions and obligations upon owners of forests to require them to manage their forests in ways that are consistent with the national or global good, while others have asserted national ownership of large areas of forest. These processes of constant negotiation and revision of forest ownership and use arrangements continue today in many countries and will doubtless persist into the future.[7]

The outcome of these long-term processes of adapting forest ownership and rights regimes to changing conditions has been that many European countries have extensive state-owned forests alongside large numbers of small patches of forest land under private ownership. France is said to have 4 million forest owners. However while people own freehold title to their forests, their rights to use the forests and the land upon which they grow are severely restricted by the state. For instance, owners of forest areas of less than 4 ha in France are obliged to allow public access for hunting and gathering certain products, while they themselves are subject to severe restrictions as to what they can hunt or gather. Even in private forests timber, landscape, watershed and wildlife values are subject to state control.

Easterly[8] provides a good illustration of similar long, drawn-out negotiations over land rights in the United States. His family has been contesting its rights to an area of land for over 200 years and the issues have still not been totally resolved. Easterly makes this point in relation to attempts by international development assistance agencies to fast-track tenure reform in developing countries. He argues that attempting to impose external concepts of land ownership and tenure onto different cultures and political systems is fraught with danger, with a very high likelihood of unsustainable and inequitable outcomes. His thesis does not run counter to that of de Soto[9] and his followers who see the attribution of land title as a key to economic advancement; however, Easterley argues that these processes are complex and cannot be accelerated at the whim of an external agent.

Activists concerned with the rights of forest-dwelling peoples often contest the legitimacy of legal frameworks used to allocate and manage forest lands. They may also contest the legitimacy of decision-making processes that put these legal frameworks into place and enforce them. The situation is especially contested where independent sovereign states operate under constitutions and laws shaped by colonial powers and reinforced by post-independence governments whose primary focus was on “nation-building”. There are numerous examples of political and military elites usurping control of forest lands and enriching themselves through the exploitation of their timber and mineral resources. Forms of words which were originally clothed in respectability such as “Crown lands”, “State Forest Reserves”, etc. lose their credibility as they come to be associated with land grabs by powerful individuals endowed with state power, but using it for private ends. In Indonesia and many other tropical countries the business and military elites were party to the allocation of much of the forest to concessions which they then exploited for their personal benefits.

LOCAL RIGHTS VERSUS PUBLIC GOODS

Biodiversity presents special challenges in determining optimum arrangements for use and ownership of forests. Biodiversity has certain values that accrue primarily to the global community while local owners and users of the forest lack effective mechanisms to profit from these values. Although most local users will value some components of biodiversity, they will not necessarily manage forests in ways that meet broader biodiversity conservation objectives such as those enshrined in the Convention on Biological Diversity.[10]

A major problem comes from the fact that a significant part of the conservation lobby attaches high value to pristine or old-growth forests. There is a deeply held belief among many conservation biologists that forests are fragile systems and that even minor disturbances may result in catastrophic change and loss of species and of environmental benefits. This mind-set emerged in the 1970s and 1980s when surveys revealed the amazing species diversity of tropical rainforests. Since the functioning of these forest systems was poorly understood, it was argued that a precautionary approach should be applied. While this approach seeks to guide decision-making in the absence of quantifiable risk, many rainforest advocates went well beyond the original intent and promoted zero or close-to-zero disturbance. Today there is little empirical evidence for this assumed fragility of pristine forests, and it is now widely accepted that virtually all forests are dynamic systems that have evolved under changing conditions of climate and human management. Although the notion of a stable "steady-state" has been replaced by one of a dynamic, self-organizing system, some conservationists still contest the possibility that rainforests can be used sustainably.

The perceived need to maintain pristine or old-growth forests required local communities to forgo all use. There is no logical reason why local stakeholders would subscribe to this view of conservation. This would require that they forsake all potential benefits from the forest and underlying land with no remuneration in order to secure hypothetical climate and use values for an unspecified global community. The adoption of the Ecosystem Principles by the Convention on Biological Diversity in 2002 was a significant watershed in international recognition of the fact that such total protection paradigms are not broadly acceptable to citizens, especially in poorer countries.[11]

The Ecosystem Principles of the CBD are a significant challenge to those conservation programmes that are strongly rooted in a tradition of achieving biodiversity goals through designating forests with high conservation values as lands that only the State can safeguard by designating them as protected areas or national forests and denying local use. Earlier conservation models based upon a paradigm of withholding private individual or community use rights and tenure are now under serious challenge.

Many traditional conservationists continue to fear that awarding tenure over forest lands to local communities will accelerate the process of forest conversion to agriculture and industrial uses.[12] These authors argue that local land owners will either convert their forests for intensive productive uses or else sell their rights to corporate purchasers, leading to consolidation of land into larger industrial holdings designed to extract maximum commercial value from the land. The arguments that such prospects can simply be countered by making payments for environmental services to owners of small areas of forest are contested.[13] The harsh reality for conservation is that, for most local people, conversion to agriculture or to industrial estate crops provides a faster route out

of poverty than either local forest management or total protection.[14]

The issue of how local rights, poverty reduction and the conservation of public goods can be reconciled is complex and poorly understood. The rest of this paper will challenge some long-standing, conventional narratives and build the case for a more differentiated and patient approach to resolve what is a highly complex and long-term dilemma.

DEVOLUTION OF TENURE AND RIGHTS TO FORESTS: RISK OR OPPORTUNITY FOR CONSERVATION

Among the development community there is a strong movement to devolve rights and tenure of forest lands—previously, at least nominally, held by governments—to individuals, communities, clans and first nations.[15] There is also now recognition of the fact that private individuals and communities are often the de facto owners and managers of forests.[16]

The principal logic behind this emerging tendency is that because the poor and marginal inhabitants of forests areas are highly dependent on those forests for their livelihoods, legitimizing and securing their rights to the resources of the forests is an ethical imperative. Government agencies charged with managing forests have rarely recognized the value that forests have for local people and have tended to place their emphasis on industrial timber interests, watershed values or wildlife rather than people. National laws often make explicit reference to local forest rights and to processes of consultation in imposing changes in these rights, but these aspects of the law are often poorly applied. Contreras and Fay[17] have documented the lack of attention to local legal rights in Indonesia. Sayer et al.[18] have shown that while people use and occupy a significant proportion of many of the forests globally significant for biodiversity—sites listed under the World Heritage Convention—they nevertheless retain much of their biodiversity value.

The extent to which the allocation of local use and tenure rights is a threat or an opportunity for either local development or conservation depends very much upon the situation. Among conservation practitioners there is now considerable experience of ways in which the threats can be minimized and the opportunities exploited.[19] In determining the course of action in any particular situation it helps to establish typologies of conditions.

There are two fundamental approaches to reconciling the rights of local communities to use and benefit from forest resources with the stewardship of public goods values. The state may establish protected areas but award rights to people to use the areas in ways that are consistent with the maintenance of conservation values. IUCN Category V and VI protected areas are examples of this. Alternatively, the state can recognize local ownership or use rights but place, or negotiate, restrictions or easements on these rights to ensure the maintenance of public goods conservation values.

The principle international conservation organizations have, at least until recently, been strongly aligned with the first approach. There has been an unwillingness to accept the reality that groups such as the Dayaks in Borneo or the Pygmies in the Congo Basin generally derive more benefits from managed forests or even non-forest uses of the land.[20] In the absence of tourism it is difficult to find examples of strong local constituencies for totally protected areas.

The second approach, private or community ownership mediated by restrictions, is widespread in developed economies. National Parks and Natural Parks in Europe are virtually all matrices of private and public land where uses are regulated to achieve environmental outcomes. We are only now witnessing the emergence of greater interest in exploring the potential for this second approach in developing countries. The expansion of the number of areas managed under so called "landscape approaches" to conservation is indicative of this shift toward the second approach.

Landscape approaches seek to optimize conservation outcomes by negotiating landscape mosaics composed of an appropriate mix of different degrees of protection and varying intensities of production within the broader landscape matrix. Landscape approaches can often be just a new name for spatial planning with ultimate control remaining in the hands of the state. However in its best manifestations landscape approaches are accompanied by, or reinforce, the devolution of real decision-making power and achieve conservation objectives through an appropriate mix of local and national stewardship.[21] The conservation community is going through a healthy process of self-examination about protected areas.[22] Although the pristine nature lobby is fighting a fierce rearguard action, the movement toward conservation in multi-functional landscapes is emerging as the most acceptable solution in developing countries with high levels of poverty.

In the Amazon, for example, 20 percent of the land is protected by state or national law, 21 percent is indigenous territory, 24 percent is private (some of which is illegal), and 35 percent is officially open access.[23] However much of this open access forest is probably subjected to unrecognized traditional uses and rights by Amerindian peoples. There are good examples of excellent conservation stewardship in at least the first three of these categories and most would agree that the best conservation and development outcomes will be from an appropriate mix of all four categories. In tropical Africa and Asia the proportion of forest lands nominally under state control is much higher; therefore fewer examples exist of significant achievement of conservation of public goods values such as biodiversity in forests under private or indigenous management.

One argument in favour of providing local ownership and trusteeship to forests is that governments have often done a poor job of conservation. Curren[24] has shown that the rate of forest loss even in officially gazetted protected areas in Indonesia is higher than in forests under management. Some government forest departments have been notorious for their high levels of corruption. Their entire existence appears to be oriented towards capturing rents from the exploitation of the forests under their stewardship.

Some advocates of local rights and tenure argue that local stakeholders will manage the forests better if they are only provided with secure use rights and tenure. This has been well documented in Nepal,[25] Mexico[26] and parts of Eastern Africa. However the story is much more complex than this and there may be as many examples where the transition to more equitable tenure arrangements has not been followed by an improved delivery of public good values.[27]

Arguments in favour of giving responsibility for forest management to communities tend to carry more weight in areas with low forest cover. Thus in Eastern Africa there is a body of evidence that suggests that local management is better for maintaining forest cover than government management.[28] In these areas there is a better chance of retaining large areas of forest under an appropriate mix of local management schemes than under government control, so the automatic securing of local rights will tend to provide the best route to conservation. In forest rich areas such as the Congo Basin and the island of Borneo, there is a more differentiated story.[29] One significant impetus for

devolving management to local people is to avoid the inequities created by industrial-scale land grabbing for timber, agriculture, mineral extraction and biofuel plantations. This, combined with government-planned conversion to estate crops is clearly one of the greatest threats to natural forest conservation. In addition, industrial scale schemes favour imported labor, which in numerous cases have negatively impacted local livelihoods. Much of the movement in favour of local forest rights is driven by the need to support local people in their struggle against officially sanctioned and illegal land-grabs. While industrial-scale investments can create local employment and fuel economic growth, it also can reinforce hardship among the most marginalized groups. Nevertheless, the perception that large-scale land-use investments are universally bad for local people is too simplistic, and there is evidence from a number of countries that the potential risk of land-grabbing can be mitigated by working through and with local forest owners and users. Activists have worked with communities in Indonesia, Central Africa and South America to register their traditional forest rights in order to empower them to resist outsiders seeking to take over their land.

While tenure reform can be used as countermeasure against large-scale land grabbing, it is probably of more limited use in areas that experience significant spontaneous or forced population movements. Refugees and internally displaced peoples in Central Africa constitute major challenges both for conservation and for the security of the livelihoods of local farmers. Victims of conflicts did not want to be displaced and would welcome the possibility of returning to their original homes. The reality is that these people now number hundreds of millions around the world and they desperately need rights to land and resources. In the Democratic Republic of Congo and Burundi, they are often resettled in the only land that was not already occupied—the protected areas.

In many other parts of the world the legacy of historical populations movements still hinders the process of defining appropriate and equitable tenure and user rights arrangements.

LOCAL RIGHTS AND PROTECTED AREAS

Untangling the complex, and often highly differentiated, relationship between local rights and the conservation of public goods has been further complicated by a lack of precision from the conservation community in articulating the rationale for certain areas to be set-aside from local use. While threats-based approaches to conservation are quite precise—though not always correct—about the nature of the impending threat to the biodiversity of an area, they tend to be more ambiguous about the exact biodiversity attributes that need to be protected, and rarely do they define what would constitute an adequate outcome. As many threats-based approaches focus on stopping the threat rather than creatively pursuing precise outcomes, they inevitably tend to prescribe exclusionary measures. For example, in Costa Rica in the mid-1990s, measures to protect declining populations of the Great Green Macaw in the Sarapiqui plains prohibited private landowners from harvesting a particularly valuable tree species, Dipterix panamensis, from forests that they had retained on their own land. The money used to enforce this ban could have, under an outcome-based approach, been used to support a payment to owners to protect nesting trees, and thus would have made the delivery of this particular public good an attractive proposition for local farmers. Instead, a threats-based approach to the conservation of this particular species served only to further isolate lo-

cal opinion from conservationists' objectives.

Human rights and indigenous peoples' activist groups have sometimes contested the status of certain government imposed protected areas because they were established without taking adequate account of traditional local rights and uses.[30] In several countries the protected status of forests has been successfully challenged in the courts on the grounds of eminent domain. Often the formal protected areas were established on areas where existing rights were not officially revoked. There are many cases where protected areas were established in areas subject to low intensity human use on the assumption that these uses were marginal or insignificant. For the people concerned these uses may have been essential elements of their livelihoods.[31] Formal protected areas rarely coincided with the often extensive networks of sacred groves and other forms of locally initiated protected areas.

As land pressures increase and democratic processes become more effective, the extent of these challenges to protected areas by indigenous communities is growing. Fears have been expressed that the present conservation programmes that deploy a threats-based approach to make the case for the establishment of as many protected areas as possible as the prime ways of achieving conservation are inherently unsustainable.[32] Cameroon and Cambodia have allocated around one quarter of their total land area to conservation, and one wonders whether future populations of those countries will tolerate the opportunity cost that this may impose on their economic development. There have been recent commitments to greatly expand the protected area estates of the Democratic Republic of Congo, Gabon and Madagascar in spite of the fact that the existing protected areas are poorly managed and have weak national constituencies.

Zuidema et al.[33] have argued in favour of matrices of small or intermediate-sized totally protected areas set within the broader landscape of managed agricultural and forest systems. The logic is that such a landscape matrix will improve the flows of benefits to local people from the land and thus minimize the opportunity costs of conservation. Zuidema et al.[34] provide evidence that such an approach is consistent with the achievement of many biodiversity conservation goals. Such outcome-based approaches to conservation where small, strategically located nature reserves—many on private land—enable the maintenance of key habitats are already the core of protected areas systems in many developed countries and of some developing countries, Costa Rica being the prime example.

DOES TENURE REFORM OFFER OPPORTUNITIES FOR CONSERVATION?

Setting aside for the moment the ethical and social justice rational for tenure reform of state-owned forest land, the principle argument for local ownership as a conservation tool is that local people may be more inclined to protect forests if they can earn a living from ecotourism or other sustainable uses, and they may be more likely to succeed in this if they have permanent rights to those forests.

This is consistent with the emerging interest in schemes to compensate people for the conservation of environmental services, including biodiversity. In most cases it will only be possible to draw up the terms of the necessary contractual arrangements and eventually make such incentive payments if local rights and ownership are clear and legally recognized. Such payments are

widespread in the developed world for forests that are in private ownership and where taxation and agricultural statistics enable calculations of production benefits foregone to favor biodiversity. Similarly conservation organizations are able to purchase and protect important forests when they are in private ownership. Conservation programmes in most developed countries depend heavily on protected areas purchased by foundations and conservation NGOs. They may be owned by conservation organizations as in the United Kingdom; by private individuals as in South Africa or Costa Rica; or under the Trusts for Nature in several states in Australia.

Private ownership and use rights regimes open the way for arrangements under which governments or conservation organizations could lease protected areas. Extensive areas of aboriginal land in Australia have been leased by the government for conservation.[35] The payments are negotiated and are intended to match the low revenues that the aborigines might achieve by farming the land. Such schemes work well when the economic potential of the land for other uses is low. Attempts to lease forest concessions for conservation in Guyana and Cameroon have demonstrated how high the potential timber rents for these lands are, especially to government officials. Conservation concessions and leases are interesting not only because they do enable the true costs of conservation to be evaluated, but also because they should—at least in theory—compel the lessee to better define the biodiversity attributes they wish to see conserved and the nature of the conservation outcome they wish to attain.

There is an emerging interest in private nature reserves in tropical countries. These reserves have long been important in industrialized countries but have failed to make major impacts in developing countries due to little interest by local purchasers and fears by potential international investors that their land rights would not be defensible under national law. Nonetheless private nature reserves are making significant contributions to biodiversity conservation in Costa Rica, Ecuador, South Africa and Australia. Forest areas protected by easements are proving attractive to purchasers because they have high conservation values.[36]

The case for conservation opportunities in community-held land may be more complex although there is a significant body of work that tends to affirm that legally recognized and defendable community ownership can be more effective in maintaining at least some high conservation values than outright government control.[37] The catch, however, is whether these values are the same as the ones that the international community would like to see conserved! Notwithstanding that particular caveat, the general principle still holds that irrespective of whether private control and management is community-based or individual based clear and defendable rights are a pre-requisite for contractual arrangements governing the provision of environmental goods and services.

A new generation of programs have been implemented in some countries to enable communities to capture financial resources for conservation initiatives by investing in community conservation capacity, such as the community conservation programs in Mexico[38] and Central America[39] and in Ghana.[40]

CURRENT INITIATIVES TO CONSERVE BIODIVERSITY IN PRIVATE LAND HOLDINGS

There are numerous examples of attempts to provide incentives for the conservation of biodiversity on lands that are in private ownership or where use rights have been awarded to individuals, communities or corporations. Many private individuals and community groups, both in rich and poor countries, value biodiversity on their land. The home gardens of Java, Sri Lanka, Viet Nam and elsewhere in south-east Asia are excellent examples. Almost all traditional communities take measures to maintain biodiversity for utilitarian, aesthetic and cultural reasons.

There are technical obstacles to reconciling biodiversity conservation with extractive use. Many of these stem from our limited knowledge of biodiversity and of its tolerance of environmental change. A consortium of conservation and human rights organizations supported by several industrial stakeholders has formed a High Conservation Value Forest (HCVF) network that promotes international collaboration on identifying and seeking optimal management arrangements for locations that have special biodiversity values. HCVF designation draws attention to the needs for special conservation measures to be applied to private or state-owned land to reconcile productive use with both social and environmental conservation needs.

Numerous national and international initiatives have been taken to favor the maintenance of biodiversity in forests managed for timber. Independent forest certification schemes require that biodiversity values be maintained. The International Tropical Timber Organization is in the final stages of adopting Guidelines for the Conservation of Biological Diversity in Tropical Production Forests. These Guidelines provide a broad overview of the issues relating to the management of corporate and private forests at a landscape scale in ways that favor both local and global biodiversity values.[41]

EMERGING ISSUES: OPPORTUNITIES AND THREATS

Much historical conservation planning has been rooted in a philosophy of achieving a stable "steady-state" based upon rational, objective analysis of land potential and the perceived threats to conservation. However the opportunities for land and the society's perceptions of the needs for conservation are constantly changing. The most obvious current example is the challenge presented by climate change to the resiliency of protected areas. Under emerging changes in climatic conditions many existing protected areas will no longer be suitable for the species assemblages that they were designed to protect. State-driven approaches to conservation that are predicated on resisting perceived external threats to an area's biodiversity through permanent gazettement and a rigid fences and fines approach may simply be irrelevant under extreme climate change. The recent spike in food and other commodity prices has major implications for land use around the world. Areas that appeared to have little commercial potential suddenly become attractive for the production of biofuels or fiber crops. A society intent on economic growth may choose to give preference to employment and incomes over the non-instrumental values of biodiversity. These sorts of concerns are encouraging the conservation movement to be more concerned about managing

for resilience than managing to preserve the status quo. Resilience requires getting the balance right between social and human capital and environmental values. Skills, competencies and effective institutions will be more important than designations on maps as the challenges of global change unfold. Land that is important for productive use today may be significant for broader environmental values tomorrow and vice versa. Initiatives such as the meso-America biological corridor provide an interesting example of measures to encourage a large number of individual, community, corporate and governmental land owners to harness their divergent interests to a shared agenda for maintaining biodiversity in a changing landscape.

An increasing number of conservation practitioners now agree that effective negotiation and management of multi-functional landscapes will provide the best way forward in dealing with the emerging challenges of climate change and that individual and community land holdings and clarity of access, use and commercial rights will be an important part of the equation.[42]

WHICH APPROACHES WORK WHERE?

A vast range of external considerations may be taken into account to determine the optimal balance of tenure and use right arrangements. Situations change with time and both the opportunities for alternative land uses and the wishes of society will not be constant in the long term. The process of negotiation and adaptation will be continuous, but there are some important factors that influence the achievement of successful outcomes. Thus, solutions that work in densely settled forest-poor areas may not work in sparsely settled forest-rich areas. The ability to enforce agreements through the courts is an important determinant of the viability of the different approaches.

The achievement of many biodiversity objectives requires that conservationists work at large spatial scales. This does not match well with the fact that the use and ownership issues of the poor often have to be dealt with at smaller spatial scales. There is often a mismatch of operating scale. Achieving a land-cover matrix that meets these large-scale conservation needs, while also being consistent with local development needs, is possible. But this requires functioning institutional and legal systems and a detailed knowledge of biodiversity that is often not found in developing countries. Achieving habitat continuity and an optimal protection of the habitats of species of conservation importance is already difficult in dynamic landscapes with multiple small owners and fine patterns of local use rights. It can be made all the more challenging if conservationists insist on using only permanent arrangements to secure public goods values. Their reluctance to embrace temporary or short-term arrangements means that promising outcomes are needlessly lost. For example, in Finland net conservation gains across the landscape increased when landowners were given the option to negotiate a 10-year renewable biodiversity agreement rather than have a permanent conservation easement imposed on their land by government agencies. On the other hand, many small farmers continue to regularly clear secondary forest regeneration from low productivity pasture lands in the tropics, not because they wish to stock the land immediately, but out of concern that, if they allow a young secondary forest to establish, they will lose the right to convert that land back to agriculture in the future. The net result is less secondary forest and less connectivity across the landscape at any one point in time.

Achieving full understanding of all the interests of local forest users and of those aspiring to own forest land takes time. Use and traditional ownership rights are often confusing to outsiders, are difficult to adapt to national legal frameworks, often overlap and are the subject of long-standing disputes and competition. Outsiders moving too quickly to establish local use and ownership regimes without fully understanding local conditions will result in contested and unsustainable outcomes. The alternative is an approach which builds up to the larger landscape step-by-step through what is known in social science as progressive contextualization. However, experience in this is limited thus far.

Negotiating and enforcing conservation easements on private forests and community-based use rights for protected areas will be complex and will require technical competence of conservation organizations and a regulatory capacity that is often lacking, especially in tropical forest countries.

The problem is rendered even more intractable because conservation advocates are often surprisingly unclear about their precise objectives for conservation. They frequently fall back on threat-based arguments related to extent of protection and minimization of disturbance and are unable to define the precise outcomes that would meet their needs. There is still a lack of the knowledge that would enable us to predict the impact upon the targets of conservation of low-level uses of forest resources. The technical capacity to negotiate acceptable levels of use or disturbance of protected forests is often lacking because the measurement and monitoring of both livelihood and biodiversity outcomes has been so poor.

Advocates of awarding local tenure and use rights are often motivated by a sense of urgency. They want to protect local users against immediate external threats to the forests. They often want to award the strongest rights possible in the shortest possible time. Equally conservationists have also been excessively hasty in imposing their programmes on local people. Far too many protected areas have been established with little study of local rights and tenure issues. There is a need for all parties to recognize the need to negotiate more complex and sustainable arrangements under which stewardship of conservation values could be reconciled with local livelihood interests. For conservationists this means not only engaging in longer-term processes that ensure that all values and the rights of all stakeholders are adequately taken into account, but also shifting from a conservation model designed primarily to mitigate generalized threats to one that seeks to achieve specified outcomes.

This situation is illustrated by recent events in the Indonesia provinces of Papua and West Papua. Moves to map and give legitimacy to traditional clan forest territories have been motivated by fears that industrial investors will take over these lands for logging or industrial plantations with minimal or no benefits for the traditional owners. However traditional rights are complex, overlapping and constantly subject to local re-negotiation. Defining them in law on the basis of surveys will ultimately help to prevent land grabs by outsiders, but the process often also involves the need for clans to negotiate with one another, and to settle old disputes, before they can unite to do so. In many cases the disputes may be intractable. In other parts of the world rising population densities and spreading modern infrastructure disrupt migratory routes and increase the competitive pressures for land between pastoralists and sedentary farmers. This is a particular problem in drier parts of Africa where forests are beset with overlapping and conflicting traditional rights. External players need to be careful not to further exacerbate tensions with well-intentioned interventions that try to find quick fix resolutions to age old problems.[43]

Optimal solutions will be complex and tailored to local conditions, and they will require strong

institutional capacity to enforce agreements. In many forest frontier areas none of these preconditions are met.

Legal systems and cadastral capacity in many countries make it difficult to achieve a good balance between local rights regarding use and conservation. Hierarchies of laws often make it difficult to determine which laws should prevail over others. Often rights enshrined in national constitutions and fundamental laws are inconsistent with sectoral laws and regulations.[44] National and sub-national spatial planning processes often contain internal inconsistencies and contradictions. Sorting out the complexity of legal and regulatory frameworks in an equitable and participatory way takes a great deal of time and resources and itself requires an effective rule of law, strong sectoral institutions and the capacity to resolve conflicts.

There is rarely a single best solution. The problems of reconciling local ownership and use rights with larger scale conservation goals can be addressed in different ways and what is optimal will vary from place to place and over time. The four Scandinavian countries have all taken different courses of action in dealing with ownership and use rights of Saami and other reindeer herding populations, and each of the solutions chosen has its strengths and weaknesses.

Payments for environmental services and a range of compensatory measures exist in some countries to reimburse people for the loss of private-use options that is needed to protect environmental public goods. The capacity to implement such schemes does not yet exist in most tropical developing countries where most of the world's biodiversity is found. Even when such schemes are attempted, they often reveal the alarming local costs of reducing the intensity of use of forest lands.

LEGACY PROBLEMS REMAIN

In most developed countries the processes of establishing forest ownership and rights has unfolded over centuries and even the establishment of conservation areas sometimes took decades of negotiation with local stakeholders. In the developing world many conservation areas were established quickly and with little local consultation because conservation organizations were so much more powerful than local residents. In many tropical developing countries any land that was not actively cultivated was considered a fair target for establishment of a protected area. Some such areas have now achieved international recognition as having global biodiversity values, while others clearly have lower conservation values. In many cases local people still contest their rights to use or own these areas and in a surprisingly large number of cases people still live within, farm and exercise use rights within designated protected areas.[45]

There are recent estimates that 10 percent of the world's protected areas are farmed. It is not unusual to find situations where people have de facto or even legal ownership rights within areas that are also designated as state owned conservation areas. Resolving these difficult historical legacies will take time, technically competent institutions, skilled facilitation and a reliable and sensitized legal system to enforce agreements. In addition, recent analysis of public protected areas budgets reveal serious lack of budget for basic management costs, particularly for local park rangers, relative to the expected management standards for those areas or to the conservation investments by communities in those areas they consider a priority.[46]

THE WAY FORWARD

The problems posed have no simple solution. However, some basic principles may have general application:

- There is no panacea. Every situation is different and persons or organizations engaging with processes of land rights and tenure reform in forest areas of high conservation value must have an in-depth understanding of local issues and a broad knowledge of how these issues have been addressed elsewhere.[47]
- Conservation organizations must move away from a rigid commitment to preserving the status quo. They must recognize that societies' perceptions of their needs for conservation will change just as climate and economic determinants of biodiversity outcomes change. Resilience and adaptive capacity is going to be more important than "steady state" threats-based approaches. Tenure and use rights are going to be among the things that change, and conservation organizations will have to work with this change.
- The historical reality that has allowed global conservation values to prevail consistently over local development values has to be challenged, especially where conservationists, by attaching infinite value to a species or an ecosystem, refuse to set limits on how much they really need to conserve. It is no longer acceptable that poor people in the developing world should, with no or inadequate compensation, have to forgo use of resources in favour of some hypothetical future benefit to global society of a species that happens to live in their backyard.
- The present ground rules for international conservation are firmly rooted in the land ethics of a few industrialized countries. As other nations emerge as influential players on the world stage it is inevitable that different perspectives on conservation and development needs will become more influential. Globalization will provide strong impetus for privatization and for exploitation of comparative advantage and economies of scale. These changes will have profound influences on what is and is not possible in terms of protected areas and special restrictions on intensity of use. Conservationists will severely limit their own options to find creative and adaptive solutions if they continue to remain in a state of denial about these changes.
- Serious dangers are inherent in moving too quickly and with insufficient local knowledge to achieve rights and tenure reform or to establish new protected areas. It takes a long time and a lot of local empathy to understand the complexity of the issues, and one has to engage for the period that will be needed to negotiate equitable and technically sound outcomes. Both conservationist and social justice activists need to be more "seeker" than "planner" and allow locally-owned options to emerge.
- Strengthening the capacity of the institutions addressing rights and tenure reform and enforcing agreements will often have to occur in parallel with the reform process itself. This may require considerable resources. For instance, cadastral services in most tropical forest countries lack the capacity to underpin a regulatory framework for rapid changes in tenure arrangements.
- Too many conservation programmes contain time bombs in the form of frustrated local stakeholders who will continue to contest the legitimacy of the historical decisions upon which conservation programmes were based. As democracy spreads and population densities rise, these latent land disputes will surface and conservation organizations should anticipate them and deal with them

proactively.

- There is a risk that environmental degradation can occur if private or community tenure is awarded without effective accompanying institutional and regulatory capacity to negotiate easements aimed at protecting public goods values. The most notable example is, when control of forests was rapidly decentralized in Indonesia, the absence of local capacity to manage the resource.
- Conservation organizations must acquire detailed knowledge of the species and ecosystems that they wish to conserve and must be explicit about their goals. They must have the capacity to monitor the impacts on biodiversity outcomes of any local ownership or use rights that are put in place.
- Stakeholders must recognize that rights and restrictions applied to both protected areas and private forest lands will inevitably need to be adapted and changed over time—one can neither expect to come up with the definitive solution at the first attempt nor assume that what works now will continue to work in the future.
- Credible and enforceable environmental service payment schemes will be essential to ensure the conservation of public goods environmental services on private and community-managed land.[48] Clarity of rights and tenure, as well as reliable, transparent and efficient distributional mechanisms, are essential if such payment schemes are to have any chance of succeeding. If successful, these schemes enable co-investment with communities already financing local initiatives in high conservation value sites.
- Landscape approaches whereby appropriate matrices of land under different intensities of production and protection and under diverse ownership and rights regimes represent the best way forward in reconciling local development needs with broader scale conservation goals. But landscape approaches take time and require skilled facilitation and a long time to yield benefits.
- There is urgent need for some practical guidance on how rights-based approaches can be applied in natural resource conservation and management. Currently there is a surfeit of theory and not enough critical analysis of case studies.

Overall it is clear that there is no simple "one size fits all" answer to the problem of reconciling local rights to lands and resources with the goal of conserving the public goods values of biodiversity. Ostrom et al.[49] have argued persuasively against the pursuit of simple panaceas for resolving resource conflicts. Different mixes of solutions will be appropriate in different situations. As the world's population grows and its demands for resources increase it is inevitable that land will have to be used more intensively and efficiently. The proportion of the earth's surface allocated exclusively to conservation has risen rapidly in recent decades. This tendency is unlikely to continue and may well be reversed. The areas allocated exclusively for conservation will be smaller and more biodiversity will need to be conserved in managed landscape mosaics. Private and communal ownership and rights are likely to increasingly apply to areas that are important for conservation. This tendency carries with it a significant risk for conservation but it also provides opportunities. The degree to which biodiversity is conserved will depend upon the interest and incentives of individual and communal land owners, the effectiveness of conservation institutions and the ability of societies to reconcile disputes, defend rights and apply, and where necessary reform, the rule of law.

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