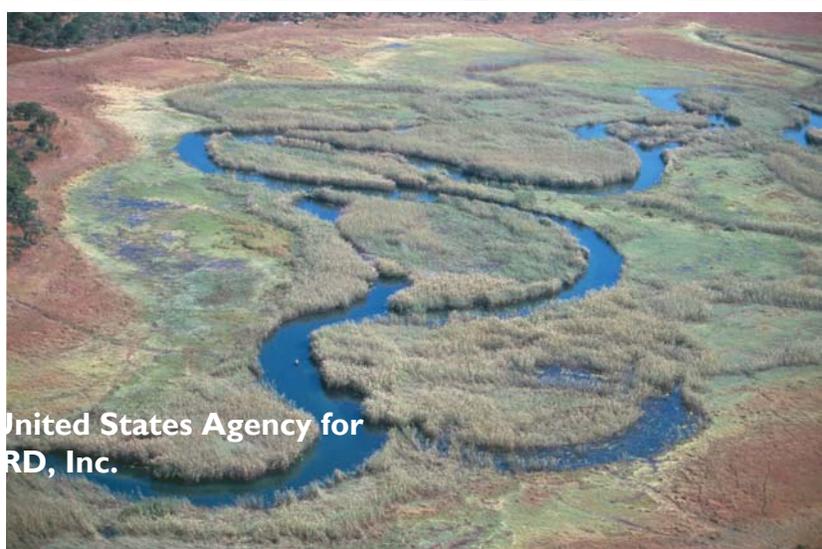




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THE ROLE OF PROPERTY RIGHTS IN NATURAL RESOURCE MANAGEMENT, GOOD GOVERNANCE AND EMPOWERMENT OF THE RURAL POOR



OCTOBER 2006

This publication was produced for review by the United States Agency for International Development. It was prepared by ARD, Inc.

Lessons Learned: Property Rights and Natural Resource Management (GLT 2)
USAID Contract No. PCE-I-00-99-00001-00, Task No. 13



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The author's views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

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ACRONYMS AND ABBREVIATIONS

CBNRM	Community-Based Natural Resource Management
ENRMA	Expanded Natural Resources Management Activity
FAO	Food and Agriculture Organization (United Nations)
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome
LTPR	Land Tenure and Property Rights
NGO	Nongovernmental Organization
NRM	Natural Resource Management
NTFP	Non-Timber Forest Product
USAID	United States Agency for International Development

SUMMARY

Property rights and the role they play in sustainable natural resource management, good governance and empowerment of poor communities is gaining significant attention in development and environmental programming. Literature and practical experience are increasingly drawing attention to property rights as an important consideration in rural empowerment and sustainable management of land and natural resources. Moreover, development agencies are increasingly recognizing property rights as a critical factor determining how land and natural resources are used and managed, and how benefits from these resources are distributed.

The purpose of this paper is to provide an overview of critical property rights concepts for non-property rights specialists involved in design and implementation of natural resource programs. This paper has four sections. Section 1 defines property rights in the context of land and natural resources. It illustrates why practitioners should consider property rights when pursuing sustainable natural resource management, good governance, and socioeconomic empowerment objectives. Section 2 is an overview of critical concepts in property rights, specifically, the notion of “bundles of rights”, the range of property rights regimes (e.g., private, community, state), the nature of property rights and factors critical for security of rights. Section 2 also provides an overview of the kinds of property rights frequently encountered in the non-Western context, as well as property rights reforms that many states and donors are currently implementing in the natural resource and governance arena. Section 3 begins with a short series of key observations for natural resource programmers about property rights reforms. It then explores five important challenges to achieving the best fit between property rights systems and environmental or development objectives, drawing from a variety of land and natural resource sectors and issues such as agriculture, fisheries, forest resource use and biodiversity conservation. Specific topics addressed comprise managing and channeling changing market incentives; harmonizing with government policies, with a focus on decentralization and devolution; building on customary property rights regimes; balancing equity and efficiency; and enforcement of property rights in a changing world.¹ Section 3 also analyzes specific policies, experiences and interventions where consideration of property rights has, or could have, successfully informed and strengthened a natural resource program. Finally, Section 4 summarizes key principles in land and property rights reforms with implications for natural resource management, governance and livelihood security in rural areas.

¹ While this piece serves as an introduction to property rights for natural resource specialists, ARD's *Land Tenure and Property Rights Framework* and associated tools may be used for guidance on operational integration of land and property rights issues into broader development, including natural resource, programs (ARD, 2005). The LTPR Framework places land and property rights concerns within the context of governance viewed broadly, economic growth, natural resource management, and poverty reduction. The associated materials include: an assessment tool for identifying land and property rights issues in any given location, a survey of land and property rights concerns in USAID presence countries, and an assessment of the severity of property rights issues in each of these USAID presence countries.

1.0 INTRODUCTION

Property rights or “tenure” refers to control over and access to resources, that is, the way in which people (individually or collectively) hold rights and responsibilities to land and natural resources upon it. Thus, the issue of property rights raises fundamental questions of who claims rights to what resources, who has access to the land and associated natural resources, and who has the responsibility for managing these lands. Of particular interest then is how land and property rights create incentives or disincentives for sustainable management and governance of natural resources such as agricultural lands, forest resources, freshwater and coastal resources, wild species of plants or animals or watersheds. These fundamental property rights questions become even more critical where natural resource markets are concerned, such as markets for timber or non-timber forest products, wildlife, ecotourism, agricultural products, payment for environmental services and other revenue-generating activities.

Control or access to land and natural resources is important for sustainable management, good governance and empowerment of the rural poor for several reasons:

1. Land and natural resources are important assets for individuals and households in meeting subsistence needs including food and shelter. To that end, access to land and natural resources (renewable natural resources in particular) is critical for poverty alleviation and food security.
2. Land and natural resources provide important assets for income generation for most rural households. Rural households may generate income through production of cash crops, or from collection and sale of forest, marine or coastal resources. Indeed, households with secure rights to land are typically better off than those with insecure, limited or no land rights (FAO, 2002a).
3. Property rights are a critical tool for promoting self-reliance among the poor. Specifically, improved access to arable land can provide incentives for greater investments in time and labor toward enhancing the natural resource base, leading to greater productivity of arable lands and hence greater food security at the household level. To that end, secure access to land and natural resources is essential for lasting solutions to sustainable land and natural resource use and management, as well as poverty alleviation.
4. Secure land and property rights are a critical element of a rights-based approach to development programming.² The rights-based approach serves to ensure that program designers proactively consider women, minorities, indigenous and other marginalized groups in development programs (FAO, 2002a).

Box 1. Property Rights, Access and Incentives Regarding Natural Resources

Property rights, and secure access to and control over land and natural resources can generate critical incentives for conservation and sustainable use, management and governance of natural resources. Insecure, unclear, limited or short-term property rights can inhibit sustainable land and natural resource management and discourage stakeholders from acting as long-term stewards of land and natural resources.

Underlying each of these concerns is sustainability of the resource base, which is often highly correlated to the level of property rights security characteristic of key natural resource users.

² The rights-based approach to development places human rights at the center of development policy, and includes economic, social and cultural, as well as civil and political rights (Maxwell, 1999).

Secure property rights are an important element of rural empowerment. Where property rights are weak or nonexistent, rural populations may be displaced or customary access and control over resources may be challenged by outside interest groups. On the other hand, secure property rights that are protected by law can empower rural communities, ensuring participation in critical decision-making processes related to the management of land and natural resources, and other social political processes.

Given the importance of property rights in providing critical incentive for sustainable management of land and natural resources, and potential for subsistence livelihoods and income generation as well as rural empowerment, the nature of property rights, what constitutes these rights, and what makes for secure rights needs to be clearly understood. Conversely, a better understanding is needed of how insecure, unclear, limited or short-term rights to land and natural resources provide disincentives for sustainable use and management of resources. Indeed, failure to take into consideration land and property rights at the outset of the program may inadvertently eliminate individual or collective property rights, fostering poverty, inequity, social instability, or in some cases, conflict. In other words, failure to grasp the incentive structures inherent in land and property rights arrangements may lead to unsustainable outcomes (FAO, 2002a).

2.0 THE MANY TYPES OF PROPERTY RIGHTS TO NATURAL RESOURCES: CONCEPTS, CHARACTERISTICS AND IMPLICATIONS

Control over and access to land and natural resources may be understood as an individual's or group's claim to a bundle of rights. These rights typically include authority to use, manage, and transfer land and various natural resources on it. People's rights, including property rights, weigh heavily in matters of *fairness, equity, and justice*, and can be understood and analyzed through a simple and long-standing model that portrays property rights as *bundles of rights*.³ This concept of property rights serves to keep the multi-dimensionality, social embeddedness and the institutional breadth and depth at the forefront of development and environmental planning.⁴

2.1 BASIC PROPERTY RIGHTS CONCEPTS

2.1.1 The Rights Bundle

A bundle of rights comprises a set of rights that may include the right to *use* a resource, the right to *manage* it, and the right to *transfer* (assign or reassign) management and use rights.⁵ Also discussed below is the common yet imprecise term, *ownership*. Each of these rights (summarized in Box 2) may be seen as a strand within the rights bundle.

³ Henry Maine first conceptualized *bundles of rights* in his classic book, *Ancient Law*, published in 1861.

⁴ Social embeddedness here refers to the social, economic and political relations, and associated institutions within which land and property rights are situated and are constituted. This can be illustrated with the following observations. Property rights entail cultural and social meaning; for example, the property rights system is a fundamental element upholding cultural identity in many customary societies. In the political realm, property rights and the ability to manipulate them, confer power. Finally, property rights are intimately related with the distribution of wealth, and thus provide powerful incentives for their protection. The expression of property rights within each of these domains has the potential either to clarify or to strain existing property regimes and the larger socio-political domains of which they form a fundamental part.

⁵ Our proposed categorization of property rights to natural resources is inspired by some existing models, such as that presented in Fortmann, Louise. (1988). *The Tree Tenure Factor in Agroforestry with Particular Reference to Africa*, from Fortmann and Bruce, *Whose Trees? Proprietary Dimensions of Forestry*, p.17; and that presented in Ostrom (1999) pp. 339.

Use rights. The most observable types of property rights are *use rights*, either to non-consumptive use of a resource or withdrawal of the resource such as gathering deadwood in a forest, grazing livestock in a pasture, producing crops on agricultural lands, or fishing in a pond. Use rights are as varied as are uses of a unit of land and the natural resources it contains. For example, use rights to a parcel of land may include the right to farm, to pasture, to plant trees, to cut trees, to build a house, to establish a non-agricultural enterprise, to exploit the land as a quarry, or any combination of such rights. Use rights to trees may include fruit or leaf gathering, honey collection, removal of bark or branches, or removal of the tree itself. Use rights to a body of water may include drinking, bathing, washing clothes, watering livestock, fishing or diversion for irrigation.

Box 2. The Four Strands in the “Rights Bundle”

Various strands in a bundle of rights related to a unit of land and associated natural resources may include:

- Right to use,
- Right to manage,
- Right to transfer (assign or reassign) use and management rights, and
- Right to “own”.

Management rights. Management rights are an order higher than use rights, and are intermediate between use and full ownership (including transfer) rights. Management rights consist of the right to organize and assign use rights. The manager of a unit of land or a stock of natural resources typically has authority to make land use and production decisions that have implications for the various *use rights* holders. Just as management rights can be distinct from use rights, management rights are also often distinct from transfer (or ownership) rights. For instance, a wetland may be legally owned by the state, but management of the wetland, that is, rules of when and where people can fish or how much fish can be withdrawn may be decided upon by a village council. Typically, in such cases, the village council will manage the wetland within the overarching regulations imposed by the state—as for instance, a state imposition of ban on fishing during specific times of the year. In such cases, the village council does not hold the right to transfer the wetland (ownership or management) to another entity. This authority will rest with the state.

Transfer right. Transfer rights exist at a still higher order than use and management rights. Transfer rights refer to the authority to assign or reassign both management and use rights. A transfer of rights may be definitive and absolute, that is, the transfer may include all rights included in the property rights bundle. The ability to definitively transfer the entire property rights bundle is a typical feature of property rights systems predominant in the West, and may be referred to as *alienation right*. However, a transfer of property rights may also apply to something less than the entire property rights bundle. For example, it is common in non-Western societies for a family or a community to transfer management and use rights attached to a specific parcel to a new arrival. The transferred rights include the right to exclude all others, including community members, from certain uses of the transferred parcel such as crop cultivation. Rights granted to the new arrival are often quite secure, and may even be considered permanent. But the right to transfer the use and management rights is typically withheld from a new arrival within a given community.

Ownership. In contrast to the rights categories presented above, definition of the term *ownership*, as applied to land and natural resources, is neither precise nor rigorous. It is a useful term, and unavoidable within a discussion of property rights. The term is used here simply to indicate priority claims to the property rights bundle made on the part of an individual, a private entity or a state. *Priority* rights can be thought of as a claim of authority to manage and administer the property rights bundle. The concept of *ownership* may vary depending upon the socio-political context. For example, *alienation rights*, taken for granted in Western property rights systems, may be entirely absent from the property rights bundle claimed by the customary owners of land and natural resources.⁶ A Westerner tends to think of ownership as a rights bundle that

⁶ For example, in some rural areas of Guinea, households may not transfer agricultural parcels to outsiders without the consent of the customary community authority structure (Fischer et al, 1995). It can also happen that a land “owner” is not authorized to make management decisions regarding his or her property, including such a fundamental decision during which years to cultivate specific parcels,

generally involves a relatively concentrated rights bundle involving a nearly exhaustive set of rights strands as illustrated by the equation: ownership = use rights + management rights + transfer rights + alienation rights.⁷ A non-Westerner may think of ownership in terms of historically established priority rights to a particular area or set of natural resources on the part of a community or clan. In such a system, assignment of use and management rights is based on the family, clan, religious or ethnic identity of the holder rather than on formal legal precepts.

2.1.2 Property Rights Regimes

The number and identity of the holders of the strands of a property rights bundle determine the category of the *property rights regime*. Typically, property rights regimes are envisioned in terms of the four broad categories: private property, common property, public property, and open access (see Box 3). Thus, private property refers to cases where all strands of a property rights bundle associated with a unit of land (or natural resource)

Box 3. The Idealized Property Rights Regimes

Private property occurs when the strands of the property rights bundle are held by a natural or legal person (ARD, Inc., 2005).

Common property exists where property rights strands are shared among members of a community or association.

Public property is established when the strands of the bundle are concentrated, held and managed by the government.

Open access occurs where either no specific rights to land or natural resources have been assigned or claimed by holders.

may be held by a natural (real individual) or a legal person (e.g., corporation). Where the strands of a private property bundle are shared among members of a defined group such as a community, that property rights regime is designated as *common property*. In contrast to both private and common property, strands of the property rights bundle may be held and managed by the government, in which case the term *public property* is applied. Finally, *open access* refers to land or natural resources that have no specific right holders associate with them. While such a situation is extremely rare, in reality, land and natural resources often experience open access situations where claimed rights are unenforceable in the face of an absence of legitimacy or the means to exclude anyone from use. This situation creates a powerful disincentive for good governance, often leading to a competition to capture resources in a race against other users.

Westerners tend to reduce property regimes to a simple dichotomous set: private property or public property. In both cases the strands tend to be tightly packaged and backed up by law with government mechanisms for enforcement of existing property rights regimes (see Figure 1). In the ideal situation, the property rights bundle is held entirely by the state (public property) or the individual or corporation (private property). In reality, the complete property rights bundle is never entirely held by a single agent.⁸ Thus, a private property claim does not normally convey unlimited authority to its holder in terms of how the resource can be used. In cases of privately held natural resources, the strands frequently remain subject to government regulations (e.g., limits on logging that regulate clear cutting on steep slopes, anti-pollution regulations that prohibit landowners from disposing of certain poisonous chemicals in surface waters that traverse their lands, wildlife and fish harvesting controls in terms of daily and bag limits). This in essence circumscribes or truncates the individual rights contained in a bundle. For example, an owner of forested lands located in a particular zone may be required to obtain a government permit prior to conversion of the forest for alternative uses, or

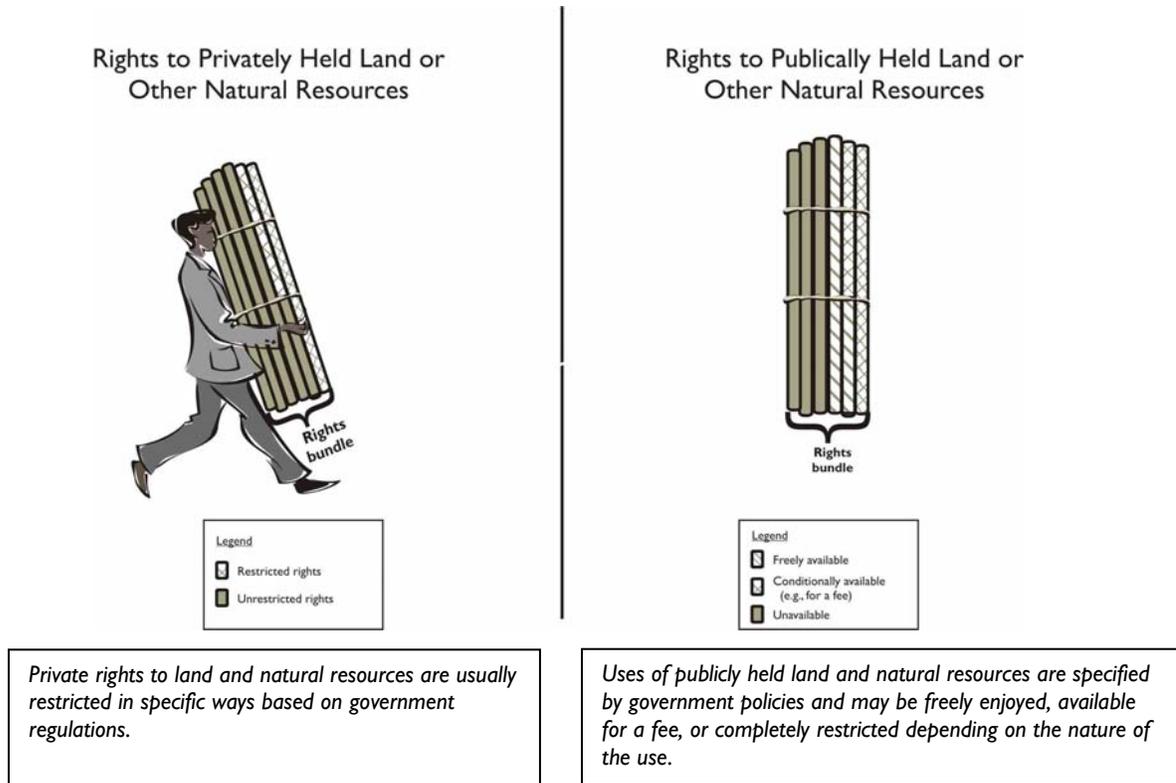
that may be instead reserved for a community-level body such as a council of elders (Fischer et al, 1995). This example from Guinea is discussed in Section 3.

⁷ This concept of ownership is greatly simplified as compared to that detailed by Honoré (1961) cited in Bromley (1989). Honoré's portrayal of ownership identifies *eleven characteristics that are said to be present in full, or liberal, ownership* (p.187). Bromley, Daniel W. 1989. *Economic Interests and Institutions: The Conceptual Foundations of Public Policy*. New York, NY: Basil Blackwell Inc. pp. 187-190.

⁸ *De facto* situations are often close to reflecting customary rules, differing significantly from *de jure* rules.

engaging in timber harvests beyond defined levels. Nevertheless, one normally expects that where private property exists, most strands in the property rights bundle are controlled by a natural or legal person.

FIGURE I. TYPICAL WESTERN PROPERTY RIGHTS MODEL



Designating land and natural resources as “public property” is generally justified in environmental terms such as creating forest reserves or powers of eminent domain exercised to create public infrastructure facilities, parks, watershed governance and management areas. In other cases, lands are by default public because no individual or group has been assigned rights to them. In public property contexts, one would reasonably expect a higher degree of government control and definition regarding publicly available use rights than is the case where property is held privately. In the case of publicly held (government-controlled) natural resources, sets of use rights—from tree felling, to pasturing livestock, to park visitation, to water consumption—are usually defined by the government and distributed to the public on a fee or non-fee basis. Most often governments grant use rights to individuals and corporations for specified time periods. Governments temporarily transfer use rights through permits and leases.

As the discussion moves toward a context of natural resources in non-Western rural settings, the concept and reality of common property and open access renewable natural resources becomes more important. Distribution of property rights to renewable natural resources is often much more complex in non-Western than in Western countries. In contrast to the relatively concentrated bundles prevalent in the Western contexts, in non-Western countries the strands of a bundle may be spread across a dizzying array of individuals and groups, as well economic operators and state agencies. Often one can observe multiple claims to the same strand within the property rights bundle (see Figure 2). Multiple claims may arise within or across property rights systems classified as either legally recognized (formal) or recognized under customary law (informal).

FIGURE 2. AN EXAMPLE OF A USE RIGHTS BUNDLE

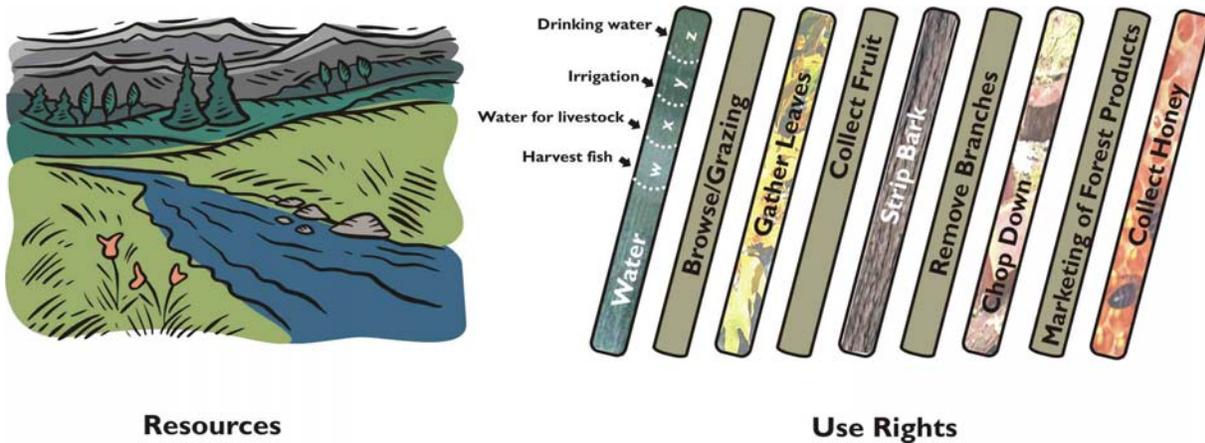


Figure 3 illustrates multiple claims to some property rights contained in the rights bundle concerning a particular forest. In this case, forest resources are the object of both a local informal common property regime, as represented in the left hand section of the figure, and a formal statutory regime represented by the middle and right hand sections of the figure.

FIGURE 3. AN EXAMPLE OF PROPERTY RIGHTS TO NATURAL RESOURCES TYPICAL IN A NON-WESTERN SETTING



Open access lands and natural resources, sometimes referred to as “non-property,” exemplify lack of specific rights, or unenforceable rights. In contrast to common property regimes, open access resources have no named and known group that claims them, and no specific institutional arrangements designed to ensure proper governance of the resource. Also unlike common property, in open access areas by definition no particular individual or group has authority to exclude anyone from using the resource. Open access is common in marine contexts, where access to resources beyond a specified distance from land may be free and unrestricted to all. Open access areas may include rangelands, forests, or wetlands. It is important to note that common property, public property, or private property may at times “slip into” open access status where local institutions, governments, or individuals responsible for governing and maintaining them lack the ability to effectively monitor and enforce rules of resource use. For instance, protected areas legally falling under state jurisdiction often experience open access situations (and are hence characterized as “paper parks”), due to lack of effective mechanisms for monitoring and enforcement.

In some circumstances “hybrid” property regimes exist. These regimes combine varying elements of the rights regimes of private, public and common property systems. The defining characteristic of hybrid property regimes is that the strands of the property rights bundle are shared among private and public entities. Hybrid property rights regimes include co-managed natural resources or community-based natural resource management, in which use and management rights are shared between government agencies and community-based organizations.

As generally perceived, private, public, and common property regimes are idealized forms of property regimes. Even the hybrid models generally ignore many ideological, legal, and social aspects systemically embedded in property rights systems. As a result, the property regime types presented above—private, public, common, and open access—have been somewhat dryly referred to as the “big four” (Wiber, 2005). Nevertheless, if used sensibly, this taxonomy of property rights regimes is a useful tool for analyzing property issues and implications involved in program or project development contexts.

In addition, multiple forms of property rights often coexist in any given location (Coward, 2006). In other words, individuals may hold rights to private lands, and at the same time, have rights to resources held in common such as collectively managed fisheries resources in a state-owned wetland.⁹ It is important to note also that property rights are impermanent and often change over time. As Coward notes, property rights arrangements are made and remade, particularly when there are shifts in political or economic power.

2.2 TENURE SECURITY AND ENFORCEMENT OF PROPERTY RIGHTS

Tenure security is characterized by enforceability of property rights, and refers to the degree to which individual or group rights to land and natural resources are recognized and protected. A lack of security implies insufficient capacity to defend a property right against competing claims, encroachment, or eviction. Insecurity of property rights invites conflict, discourages investment,¹⁰ and in some instances creates disincentives for sustainable land and natural resource stewardship, for instance by instigating land clearing in efforts to legitimize land claims (see Unruh et al. 2005). Numerous factors play a role in determining the level of tenure security. As summarized in Box 4, these include the legitimacy of the property rights, institutions

⁹ Such coexisting property rights are best illustrated in a “communal” tenure system not unusual in the non-Western context. In a communal tenure, individual property rights are often derived from the property rights of a community, such as a lineage, a village, or another social group (Bruce, 2004). In such a case, rights of individual landholders can be limited by the community from which those rights are derived.

¹⁰ A good summary of the economic advantages obtained through security of tenure is provided in Place, Roth and Hazell, *Land Tenure Security and Agricultural Performance in Africa: Overview of Research Methodology*, in Bruce and Migot-Adholla, *Searching for Land Tenure Security in Africa*, Dubuque, Iowa: Kendall/Hunt Publishing Company, 1994 (sponsored by the World Bank).

Box 4. Elements of Tenure Security

Tenure security is characterized by:

- Legitimacy,
- Institutional backing,
- Clarity, and
- Excludability.

available to support legitimate property rights (Meinzen-Dick et al., 2004), clarity of rights, and excludability of these rights (Lawry, 1990).

Legitimacy. A leading factor in property rights enforceability is the degree of legitimacy of the property rights system in which the claimed rights are anchored. A high degree of legitimacy encourages voluntary compliance on the one hand, and discourages challenges to recognized

rights on the other. A high degree of legitimacy reduces the need for repressive responses and elaborate institutions for dispute resolution. Property rights gain legitimacy through laws and associated institutions (see Table 1). A diverse set of laws and institutions may legitimate property rights claims; however, these typically involve customary law enforced by a local governance unit such as village institutions and elected or appointed institutional or village authorities. The statutory system is defined in written laws (*de jure*) enacted and enforced by a central or regional government.¹¹ Customary property rights regimes are often referred to as non-formal (*de facto*) systems. These typically incorporate unwritten rules, often characterized by property rights systems of considerable complexity. Customary property rights systems, which have evolved along with the societies in which they are rooted, often enjoy a degree of legitimacy in the eyes of local people that far exceeds that of (imposed) statutory laws. Indeed, in many parts of the non-Western world, it is the customary rights that legitimate property rights in rural areas. For instance in West African countries, Toulmin (2005-2006) notes that rights to only 2-3 percent of land may be formally recognized under statutory law. A majority of those parcels are localized in urban or other commercialized areas. Various sets of laws (formal and non-formal) may contradict each other resulting in overlapping claims and at times conflict.

TABLE I. SUPPORT FOR ENFORCEMENT OF CUSTOMARY PROPERTY RIGHTS TO VILLAGE LANDS AND NATURAL RESOURCES: THE ROLE OF LEGITIMACY

Rights Holder	Type of Rights	Basis for Legitimacy	Challenges to Legitimacy
COMMUNITY	ownership rights	Traditional authority structures of community; shared history and traditions	Government claims to manage reserves, waterways, watersheds, fisheries and wildlife, as well as otherwise “vacant” lands; development of land markets
COUNCIL OF ELDERS	transfer rights	Traditional authority structures of community	Hereditary posts losing power and authority; fragmentation of authority as it shifts from community-level toward households and nuclear families
HEADS OF HOUSEHOLDS	management rights	Traditional authority structures of community and households	Household fragmentation and assertion of claims to portions of family common lands on part of nuclear families
HOUSEHOLD MEMBERS	use rights	Traditional authority structures of household backed up by community	Money economy develops creating livelihood options for household members beyond farming; encourages land markets)

Institutional Backing. Institutions are necessary to enforce the specific legal system that provides legitimacy to a set of property rights. These institutions (associated with each legal system) are responsible for making and modifying rules of the regime; monitoring compliance with those rules; sanctioning persons who infringe rules; mediating any resulting conflicts; disseminating information about results of monitoring; sanctioning; resolving disputes; and mobilizing resources, leaders and staff to conduct all these functions. The

¹¹ Other sets of laws and rules regarding property rights may apply depending on the context and the specific site. For instance, Meinzen-Dick et al. (2004) identify religious or “project” laws that may apply to specific areas.

effectiveness of the property rights claims depends on the strength of the institution(s) defending the rights, and institutional ability to enforce rights (Meinzen-Dick et al., 2004).

In customary systems, the recognized authority of village leaders and governing councils provide the basis for mediating conflicts, issuing rulings and imposing penalties where needed. In many cases, people prefer customary governing councils to formal courts since there is a sense that local mediators, if selected by the parties to the dispute, are likely to render more appropriate judgments. The customary governing councils typically have fewer “transaction costs” than do state courts. In other cases, individuals may prefer taking disputes to formal courts as it may allow buying of corrupt decisions and wresting control of land or natural resource from other local actors. Localized institutions may be at a disadvantage when uses and markets for natural resources begin to exceed village boundaries. Such institutions have often found it difficult to compete with statutory law buttressed by institutions such as networks of judicial courts and land and natural resource agencies.¹²

Clarity. Clarity, or shared and widespread understanding, of existing property rights is another factor in securing property rights since it helps to eliminate the *gray areas* within a property rights system that can lead to ambiguity. Well-functioning property rights are dependent on the degree to which each strand of the property rights bundle is clearly defined, and transparently assigned to one or more rights holders. Insufficient clarity in defining and assigning rights encourages competing claims and warps incentives in use, governance, and management of the resource. Clarity of rights may be challenged by conflicting claims to an identical right rooted in competing property rights regimes, and the tendency for rights to change over time. A common example of lack of clarity resulting from competing property regimes is assertion of state property use restrictions on forests, versus customary claims of management and use rights. In other cases, overlapping claims emerge in post-conflict situations where shifting waves of refugees leaving and entering the country at various times have established overlapping claims to land and natural resources. Lack of clarity and gray areas can pose great risks to enforceability since each competing property rights system attempts to uphold conflicting rules regarding access and use of natural resources.

Excludability. A use, management or transfer right to a natural resource has meaning only to the extent that the rights holder is capable of excluding non-rights holders from using the claimed right. Lack of capacity to exclude non-rights holders from property held by recognized rights holders moves the property system toward a situation of open access and potential conflict.

2.3 OTHER IMPORTANT ASPECTS OF PROPERTY RIGHTS REGIMES AND NATURAL RESOURCES

2.3.1 Property Rights Systems Are Dynamic

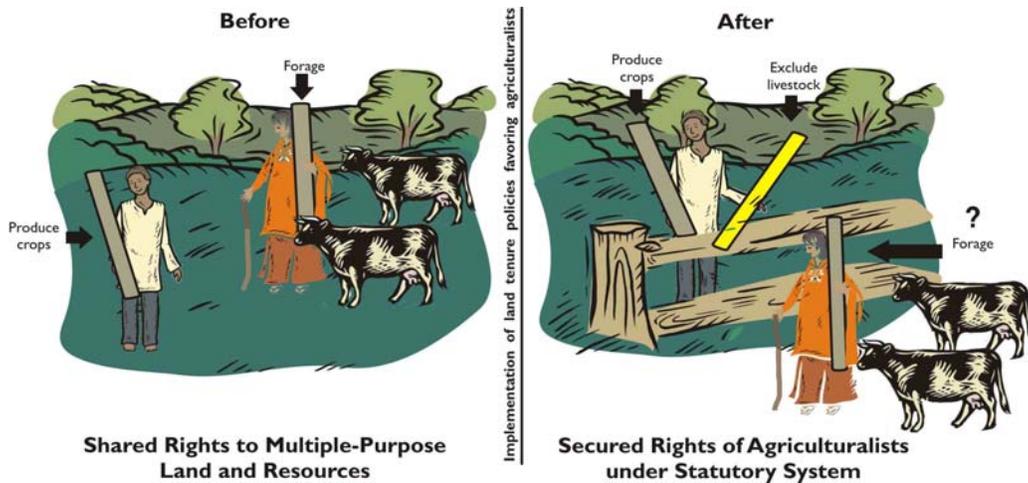
In observing customary tenure property rights systems, one notes that over time different use rights may come into existence or fade away depending on a variety of economic, political, and social developments and trends. For example, trends in securing livelihoods can influence production practices and therefore the types of uses made of natural resources. Since use rights are often linked to established practices, particular rights may be strengthened while others are lost as new and different types of markets develop or production intensifies.

One can consider, for example, the case of herders and farmers who traditionally shared the same space but made different use of it: one for agricultural production and the other for forage. Where competition for the

¹² It is important to note, however, that customary tenure systems may be considered legitimate by individuals and communities at the local level—nevertheless, they may not always be equitable. Powerful groups based on ethnicity, gender, and social status may form rules that exclude certain groups or restrict their rights. Both customary and statutory systems are susceptible to institutional inequity and exclusion (see for instance Fitzpatrick, 2005; Larson, 2004; McAuslan, 1998).

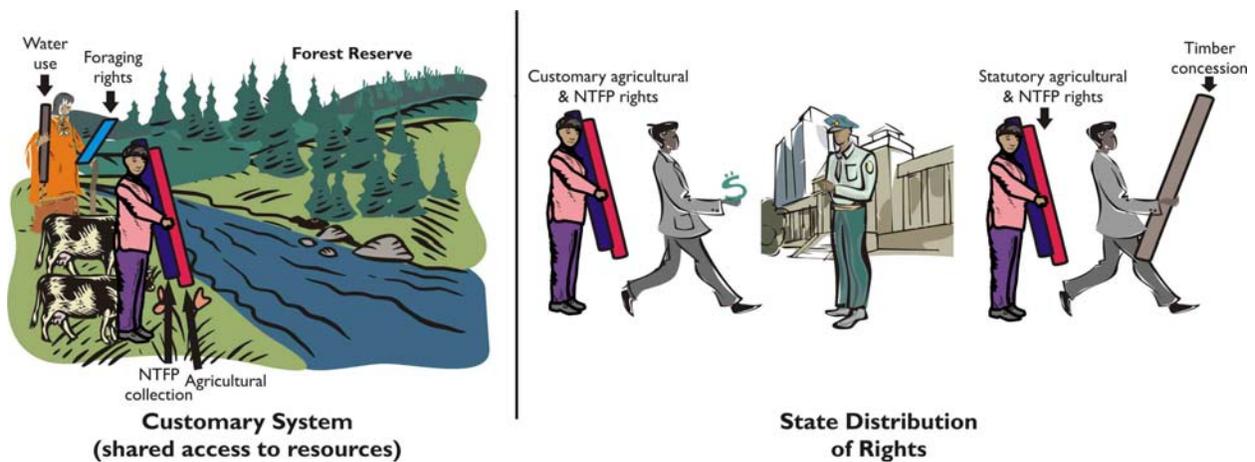
respective resources is manageable, and different uses interfere little with each other, the various claimed rights can endure for extended periods. Sometimes such systems were reinforced by a prohibition on fence-building around agricultural parcels that were used seasonally by transhumant herders (see Figure 4). But as competition for the resource intensifies, circumstances may favor reinforcement or extension of rights held by one group and the weakening or disappearance of rights held by a competing group. Compared to transhumant pastoralists, farmers enjoy the advantage of occupying the same area year round. A development such as intensification of agriculture over time, or simply heightened demand and competition for land, can favor use rights holders who continuously occupy, or are in close proximity to, a resource that has customarily been shared on a seasonal basis.

FIGURE 4. CHANGE OF RIGHTS OVER TIME



Similarly, Figure 5 illustrates how the designation of a forest reserve by the government can change property rights at the local level. Here, initial customary rights of settled agriculturalists to cultivation and collection of non-timber forest products (NTFPs), and pastoralist rights to seasonal foraging of livestock and water use are altered as the government grants timber concessions to an urban entrepreneur. In this illustration, while the rights of the settled farmer are retained and recognized in the statutory system, pastoralist seasonal rights are not, possibly due to lack presence of the pastoralists at the time customary rights were recorded by the state.

FIGURE 5. STATE FORESTS: COMPETING INTERESTS



2.3.2 Property Rights to Land Versus Natural Resources

Access to land, and rights to use it are important aspects of rural wealth for the numerous direct and indirect benefits that land provides to rural populations. Property rights to land provide critical assets in terms of meeting subsistence needs and numerous income-generating opportunities, such as cash crop production. In addition to these direct subsistence and commercial benefits that land provides, access to arable land serves also as an important safety net—particularly for the rural poor. Basic livelihood needs may be met from this single resource, even where land parcels are small.

While control and access to land are important and acknowledged in many rural development strategies, to date, the important role that rights to natural resources play in rural livelihoods is rarely adequately recognized. Emphasis on income-generating activities such as agricultural cash crop production and on formally marketed goods has reduced visibility of renewable natural resource contributions to rural livelihoods. Rural livelihoods often incorporate a diverse portfolio of activities that serve to enhance household income and food security, improve health, and sustain social networks (Shackleton et al., 2000). Studies show that collecting natural resources daily or occasionally from communal areas serves to meet a variety of needs of a high percentage of rural households in non-Western countries. These natural resources include firewood, charcoal, fodder for livestock, water, and other resources for agricultural production (wood for tools and implements), building materials (wood, fibers, grasses), foods (fruits, nuts, seeds, tubers, honey, bush meat), and medicinal plants. In addition, property rights to livestock enable owners to meet a diverse range of subsistence, commercial, or other needs including food (meat and milk), animal traction in agriculture, transport, and manure; while livestock such as goats and barnyard fowl provide owners stores of value that generate real rates of return with both commercial and subsistence uses. This creates for owners a safety net against misfortune and for use in times of critical cash needs (Shackleton et al., 2000).

Property rights to natural resources in forests, pastures, freshwater, marine and coastal areas (often held in common) are fundamental to these livelihood strategies for the numerous economic and environmental services they provide. Increasingly, studies show the significant role that forest resources play both in household income and subsistence. For instance, in Mozambique 85 percent of energy needs are met from woody biomass (Norfolk, 2004). In parts of Namibia, wild foods provide up to 50 percent of household food during the non-agricultural season (Ashley and LaFranchi, 1997).

In addition to subsistence, commercial demand for many natural resources provides additional opportunities to rural communities. For instance, Cavendish's (1999) study in Zimbabwe suggests that wild products harvested from the commons contribute to as much as 40 percent of average household income. Recent developments in state-community partnerships (co-governance and co-management) in wildlife conservation and occasionally partnerships with private sector are opening new opportunities for rural livelihoods in communal lands. Revenues derived from such partnerships and associated rights may be seen as property. In such instances, property right is not a claim to a specific land parcel or natural resource, but rather a claim to the natural resource benefits that flow from a commons (Bromley, 2003).

The significance of common property resources particularly for the most vulnerable segments of rural society is increasingly recognized. In many parts of the developing world, communal lands support the majority of the rural population, many of whom live below poverty. Female-headed households, female members of households, and the exceptionally poor or 'marginalized' members of rural communities tend to be particularly reliant on natural resources for their livelihood needs. For these segments of the society in particular, access to natural resources (natural capital) remains a crucial source of livelihood, and often the safety net of final resort. For instance, in Botswana a study conducted by Kerapeletswe and Lovett (2001) showed that common property resources may provide more than half of the total household income for the poorest 20 percent of population. Property rights reforms which aim at individualization can eliminate property rights to diverse resources, or to associated benefits, or both.

In some cases community management of natural resources may outweigh benefits of individual property rights. For instance, customarily in many countries within the Western and non-Western contexts, pastures

have been, and continue to be, managed as a common property resource. Pastoralist groups may manage this resource through seasonal movements and a rotational system of use. In order to limit excessive use of a pasture resource, grazing may be regulated to specified areas during specific times. When carrying capacity is reached, grazing is shifted to adjacent parcels. This ensures that no unit of land is overgrazed. The ability to move over large areas reduced, to some degree, herder vulnerability to drought and constraints of land quality of fixed plots (Fernandez-Gimenez, 2006; Thomson, 1992). Recent trends in land privatization, however, has reduced mobility of pastoralist groups, confining grazing to relative small land parcels, and as a result significantly reducing productivity and plant species diversity in these pasture areas (Fernandez-Gimenez, 2006).

2.4 DISCUSSIONS AND TRENDS FROM THE LITERATURE

Many countries have reformed land and property rights since the 1960s. These efforts strove to improve access to and control of land by the landless and rural poor. Later, in the 1980s and 1990s, land reform programs sought to increase tenure security of rural and urban populations alike. This latter trend arose largely in response to highly centralized governance and management of land and natural resources under the colonial and post-colonial eras and the often progressively less secure rights derived from pre-colonial times that left rural populations increasingly vulnerable to landlessness and eviction.¹³ While many national governments in non-Western countries have attempted to redistribute lands and address issues of inequity, donor assistance to land reform has largely focused attention on privatization of property, individuation of property rights, and formalization of tenure. More recently, these trends have included legal recognition of customary and indigenous rights within statutory legal frameworks (FAO, 2002b). In some countries—for example Botswana, Namibia and Malawi—national governments have created statutory enabling frameworks that (i) provide incentives for generation of new rights (and income streams) in indigenous communities, or (ii) recognize and support indigenous initiatives to establish use rights and limit harvesting of selected natural resources with the objectives of ensuring sustainable use and proper stewardship of these resources.

In addition to these land reform initiatives, natural resource governance and management policies have often modified property rights in natural resources, although the trends are mixed. Many wildlife conservation strategies that persisted throughout much of the twentieth century and into the present century embrace the tradition of state property and strict management of use rights as tools for protection. Establishing protected areas has undermined customary property rights either through evictions or elimination of access rights to natural resources such as non-timber forest products (Dowie, 2005). This approach often ignored legitimate customary rights, leading to conflict between local communities and the state, and in many cases rapid degradation in these protected areas.

The 1980s brought with it clear realization that government management of natural resources and strict protection models for biodiversity conservation present difficulties for a number of reasons:

1. Governments began realizing that they lack financial and human resources to manage sustainably the vast tracts of lands and renewable natural resources therein. In particular, monitoring, enforcement, and dispute resolution required extensive resources that most governments lacked. Without adequate systems for monitoring and enforcement, lands legally under state management have in practice exploited as open access resources.
2. Governments lacked transparency and accountability in governance and management, posing enormous threats to state-held lands. State-held lands and natural resources in many instances came under abuse by corrupt government officials. This has taken the form of illegal logging, granting of mining or logging concessions to private companies in critical ecosystems including *protected areas*, or in certain cases exploitation of natural resources by governments (including military) to extract revenues for personal

¹³ Similar experience can be noted in the Former Soviet Union and the Newly Independent States.

ends or to finance violent conflicts or both (e.g., Indonesia, Liberia, Myanmar, Cambodia, Democratic Republic of Congo, Sierra Leone) (Ross, 2004).

3. Government agencies in many cases succumbed to incentives to address short-term economic priorities rather than long-term environmental gains.
4. Centralized policies and regulations were often poorly designed and did not reflect user concerns and needs. At the same time, user groups failed to subscribe to the centralized policies, leading to low compliance.
5. Finally, diverse experiences revealed that government-imposed, protection-oriented models illegally confiscated rights of local communities including indigenous groups.

Thus, earlier emphasis of development programs on economic growth rather than meeting livelihood needs, and government attempts to control natural resources (typically to enrich themselves) rather than empowering local individual, group and community owners to better govern and manage the lands and natural resource in question has caused significant harm, both to popular confidence in central government officials and to the possibilities for sustainable stewardship of natural resources.

The past two decades have seen significant advances in decentralization and particularly devolution of natural resource governance and management. Decentralization (transfer of government functions from the center to local government) and devolution (transfer of authority to local level community institutions) are important strategies for sustainable management of land and natural resources, ensuring livelihood security and empowerment of the rural poor.

These policy changes are based on the recognition that effective governance of natural resource can take place through devolution of governance and management rights and responsibilities to those residing in closest proximity to the resource. Many of those individuals, families and user groups are keenly aware of their dependence on the land parcels and natural resource in question. This often biases them against short-term extractive exploitation and in favor of long-term stewardship. There is increasing recognition of local knowledge and governance capacities of local institutions. In case after case local knowledge of local conditions, particularly concerning the health of land and other natural resources, turns out to be more fine-grained and sophisticated than that of officials and technicians in overlapping local, regional, and national regimes can muster. Indeed, people who live with resources often have a clear “knowledge” advantage over those who merely pass through an area from time to time.

In many instances, local institutions of resource governance can be more effective in monitoring, enforcement, sanctioning and dispute resolution systems than government agencies. Here again, a large part of the explanation lies in superior time and place knowledge, backed by far greater legitimacy. Decentralization and devolution, therefore, serve to provide enabling environments for effective governance by local institutions, thereby eliminating open access circumstances and associated mismanagement of lands and natural resources. In addition, local institutions serve to introduce important checks and balances on state governance and management of lands and natural resources. Management of resources by local institutions and user groups allows for greater cost-effectiveness in management of resources, and is better adapted to changing ecological conditions and more responsive to complex and fluid needs of the multiple user groups that may change in space and time. Decentralization and devolution policies allow policy makers to develop solutions that integrate socioeconomic, food security, and poverty alleviation concerns with improved stewardship of land and resources. Decentralization and devolution, and associated security of property rights, have served as well to empower rural communities and create incentives for the kind of stewardship that help ensure long-term sustainability of resources at the local level.

Under decentralization and devolution efforts, customary rights to lands and natural resources are increasingly being recognized under statutory law. For example, national land laws and policies in a number of African nations have begun legally recognizing customary rights to individual and communal lands. In Mozambique, the land law grants communities management and decision-making powers regarding use of the

commons. Similarly, in Tanzania, the village Land Act recognizes customary occupation or use of land. In Uganda, the Constitution and Land Act provide secure tenure to holders of customary land rights, and authority of local land committees to administer customary laws. The Act allows for communal ownership and communal claims to these resources (FAO, 2002b). In neighboring Botswana, Namibia and Malawi, state-enabling frameworks similarly authorize local committees or user groups to govern and manage several types of renewable natural resources. Even though in certain cases those are *new* initiatives, they draw the same power, legitimacy, and efficiency from their local foundations as do comparable local initiatives of longer standing.

In Latin America and parts of Southeast Asia over the past two decades, national laws have promoted legal recognition of rights of indigenous peoples, giving inalienable rights to customary claims. In South America, for example, indigenous rights are legally recognized in a number of countries including Brazil, Colombia, Peru, Bolivia, and Ecuador. In Bolivia, the 1996 Agrarian Reform Law legally recognizes the *Tierras Comunitarias de Origen* giving indigenous groups collective inalienable rights over customary claims to land and resources (FAO, 2002b). In Ecuador, the Constitution recognizes inalienable land claims of indigenous groups to customary claims. In the Philippines, the 1997 Indigenous Peoples Rights Act recognizes indigenous ownership and control of ancestral domains. Associated regulations prevent encroachment and expropriation by outside groups. This trend in recognition of indigenous property rights is also visible in the west. For instance, Canadian law recognizes rights of Canada's *First Nations* (indigenous groups) and, in so doing, recognize a wide variety of indigenous claims to resources, e.g., extremely valuable timber, wildlife, fish and water rights (McNeil, 2001).

Over the past two decades, co-management and community-based natural resource management (CBNRM) approaches have recognized rural populations and their property rights to natural resources in various capacities. These hybrid property rights typically have implications for use or management rights, but rarely for transfer rights. Various forms of co-management and CBNRM models exist (Child, 2005). However, in general, both co-management and CBNRM initiatives seek to work the diverse stakeholder groups (including local user groups) linked with specific units of land and stocks of natural resources, and attempt to reconcile their diverse interests. Under such arrangements, stakeholder groups enjoy specific benefits and share responsibility for management or governance of the specific unit of land or associated natural resource.

Lynch (1999) makes a useful distinction between decentralization and devolution on the one hand and community-based property rights on the other; advocating the latter for long-term occupants of specific areas and to the commons. As Lynch notes, the former mechanisms gives group rights to local communities for use of public land and natural resources contained therein. In such cases, the government retains ownership of lands but grants leases or delegates property rights for a specific period of time to local user groups under community forestry, or hybrid forms of property rights such as CBNRM or co-management arrangements. Lynch advocates community-based property rights, or legal recognition of private group rights, given that private rights provide greater security and are subject to fewer state controls than are use rights under decentralized systems of natural resource management. Such private rights also allow local communities to negotiate with governments and outside interest groups on more equal terms than those associated with use rights on public lands.

As decentralized and devolution approaches to natural resource management become popular around the world, there is also recognition that devolution in particular is not a panacea. As Larson (2004) notes, decentralization or devolution may not always lead to sustainable management of natural resources, nor do all customary systems ensure equity of resource distribution and decision making. Elite capture may lead to powerful groups dominating decision making and resource use at the expense of the poorer and marginalized group(s). In other cases, customary systems may be biased against a specific gender (typically women). Devolution of some but not all powers is therefore recommended by some, hence ensuring social equity and environmental sustainability as defined by national governments (Ribot, 2004). In other cases, collaborative or co-management models may provide appropriate checks and balances to ensure equitable distribution of rights and environmental sustainability.

3.0 PROPERTY RIGHTS IN ACTION: ILLUSTRATIONS OF SOME KEY CHALLENGES AND OPPORTUNITIES REGARDING PROPERTY RIGHTS TO NATURAL RESOURCES

This section begins with a summary of key observations regarding property rights to natural resources that have emerged to this point in the discussion. These observations underlie the contemporary challenges that are the focus of much of the remainder of the section.

3.1 PROPERTY RIGHTS TO LAND AND NATURAL RESOURCES: KEY OBSERVATIONS

1. ***A property rights system and related institutions are nearly always present.*** Wherever stocks of natural resources exist, some type of property rights system that governs—or attempts to govern—access, use, management, and transfer of the natural resources nearly always exists. A situation of open access to natural resources occurs where property rights authority systems are inadequately equipped to enforce claimed authority or are excessively challenged; however, governing principles are very rarely absent. Information regarding local property rights rules and their enforcement is usually fairly easy to come by. Posing questions to observed resource users about access and use rules is a good place to start.
2. ***More than one property rights system may operate at the same site.*** Often *overlapping* and perhaps *competing* property rights systems exist in relation to a given natural resource set. A common occurrence of plural property rights systems involves customary and statutory rules and policies. But property systems may also be defined and applied through vehicles as diverse as religion or development projects. The presence of multiple systems regulating, or claiming authority to regulate, property rights has significant impact on the contents and coherence of the bundles of rights attached to the natural resources of a particular site.
3. ***Whatever the orientation of national policies, customary practices remain in effect in many settings.*** In non-Western countries, *customary* property rights systems frequently retain *de facto* authority and institutions that continue to regulate and enforce property rights, although in many cases customary systems are challenged and weakened. Customary systems react to, and may compete with, government policy and changing socioeconomic conditions. Nonetheless, customary property rights systems often retain much more coherence and legitimacy than competing systems and events. Indeed, it is important to understand the property rights situation in terms of *de jure* versus *de facto*, and *customary* versus *statutory*. Often one finds that initial perceptions of a property rights regime turn out to be only part of a much larger picture.

4. ***Customary property rights systems are durable.*** Property rights systems, particularly customary systems, exhibit characteristics of *flexibility* as they evolve in the face of changing economic, social, and political environments. This flexibility, along with long-standing local legitimacy, makes it difficult to replace a customary system. Also, in many circumstances, it is *not necessary* to replace customary systems. If the goal is to *improve stewardship* of natural resources, *rather than promoting or facilitating* exploitation by outsiders (with the latter arguably leading to further marginalization of already impoverished populations), then states can materially strengthen customary systems—particularly those that have demonstrated their utility and robustness—simply by according them official recognition. When outsiders challenge the authority of customary rules and institutions, an occasional state intervention underlining state support for customary rules and institutions can enhance their credibility and reinforce their legitimacy. Such rules and institutions gain a new lease on life simply because the state or national government has recognized their existence and utility.
5. ***Customary property rights are not a panacea.*** As noted earlier, customary land and property rights are not always equitable. Societal prejudices against particular groups, including women, are often reflected in the associated property rights system. In some cases customary tenure systems may not promote sustainable management of natural resources, and instead engage in exploitative use responding to changing economic incentives. In other cases yet, customary systems may find it difficult to adapt to the rapid pace of changes taking place in the current context (Mathieu et al., 2003). It is useful to note however, that statutory property rights systems are equally susceptible to inequity arising from unfair privileges granted to favored groups. Statutory property rights may also promote unsustainable management of natural resources through unclear, contradictory or poor policies, or through the poor implementation of these policies. Therefore, some combination of the customary and statutory systems could yield positive results.
6. ***Form often follows function.*** Established practices often constitute the basis for establishment of the rules that govern property rights systems. This principle is articulated in the well-known maxim: *possession is nine-tenths of the law*. In many parts of the world, customary land tenure systems have to adapt to demographic pressure and changes in local economy. As a result, agriculture is coming under direct competition against non-agricultural uses of land. As Mathieu et al. (2003) illustrate of Burkina Faso, customary rules and restrictions, such as restrictions regarding alienation of land to outsiders is coming under pressure. As new practices become dominant, rules are often modified to reflect these changing practices. Conversely, regulation of practices through proclamation of new rules can be even more challenging. This is evidenced in the fact that in many countries volumes of land tenure legislation have been produced but they have never been effectively implemented.
7. ***To be complete, a property rights system needs “sticks”.*** To enforce rules, a property rights system needs teeth in the form of institutions capable of monitoring compliance with rules, imposing penalties for non-compliance and resolving disputes. Where such institutions are lacking, existing rules governing property rights will not necessarily shape practices.¹⁴ Among the challenges to customary property rights systems is that legitimate authority to enforce rules may not be recognized beyond community boundaries, whereas challenges to local rules are often non-local. As local authority weakens, it may also become more feasible to challenge rules from the inside. However, it is equally important to note that many statutory rules ostensibly governing access to and use of natural resources lack the institutional supports upon which their enforcement depends.
8. ***To be complete, a property rights system also needs “carrots”.*** New or expanding market incentives can either pose threats to existing property rights, or create opportunities for achievement of

¹⁴ The system of sanctions and rule enforcement can vary. Sanctions may take the form of imposed fees or penalties for rule violations. However, in many non-Western contexts, parallel or overlapping systems of sanctions may exist, as for instance social sanctions and the fear of social exclusion, or supernatural sanctions based on belief in divine retribution.

environmental and development goals through a rights-based approach. Market incentives, where carefully managed, can complement and reinforce existing property rights systems. Unmanaged market incentives can destroy existing rights systems and lead to free-for-all competition favoring those with privileged means and access. Where property rights are ignored and not replaced, few constraints or guidelines remain regarding environmental sustainability. Usually the most appropriate approach to skirt this problem is to channel incentives toward traditional and local natural resource users.

9. ***Duration of tenure has implications for security of tenure and productive investments.*** Individuals or groups with short-term use rights are unlikely to invest in long-term sustainability of land and natural resources. For instance, five-year use rights are unlikely to provide adequate incentives for investments in planting slow growing trees or in soil and water conservation works as the time period is too brief to permit short-termers to benefit from their investments. Long-term tenure security is fundamental for long-term investments in land and natural resource sustainability (FAO, 2002a).

3.2 FIVE KEY CHALLENGES TO A RIGHTS-BASED APPROACH FOR BETTER NATURAL RESOURCE MANAGEMENT

In the following section, the focus is on selected challenges in property rights reforms within the natural resource programming context. The following themes of contemporary importance are explored:

1. Managing and channeling changing market incentives,
2. Harmonizing with government policies (with a focus on devolution/decentralization),
3. Building on customary property rights systems,
4. Balancing equity and efficiency, and
5. Enforcing property rights in a changing world.

To illustrate these key challenges to property rights and how they function in non-Western and transition societies, the property rights concepts and summary of trends in the literature featured in the previous section are transposed into a practical and dynamic context—one that closely reflects the real world conditions in which natural resource and development practitioners and managers operate.

3.2.1 Managing and Channeling Changing Market Incentives

Societies everywhere are becoming more dependent on participation in market activities to satisfy all manner of consumption needs and wants. Whether the result of population increases, advertising, changing tastes or rising incomes, markets for natural resources—or for products that require natural resources as inputs—are growing. Growing markets may threaten sustainability of natural resources as demand increases; introduce or intensify the conflict between use of natural resources to satisfy subsistence needs (and as a livelihood strategy) and use of natural resources as inputs for commodity production; require new and more efficient organizational configurations that can respond to management needs inherent in production for markets; or increase the strain on existing property rights rules and enforcement institutions that have yet to adapt themselves to functioning in a market environment.

Markets require that actors are endowed with particular types and levels of organizational capacity. Capture of an income stream provides the incentive that motivates the would-be provider of a commodity to produce and market the commodity. Therefore, for markets to work effectively, clear channels must be established to shape income flows in a predictable manner. Control over commodity inputs, such as natural resources, is an obvious benefit to the supplier of the commodity. Two important potential developments may arise:

- Existing property rights may be challenged since the economic actors motivated or positioned to take advantage of new market opportunities are not necessarily the same individuals and groups as existing rights holders. Frequently market operators take a short-term approach to natural resources, while those who depend on the same resources for inputs to their production systems are *structurally encouraged* to take a long-term approach to those same resources and prefer sustainable flows of goods and services to

single-round exploitation strategies. Thus natural resource advocates will likely have strong incentives to support customary or long-enduring user groups.

- New or increasing market incentives encourage a tendency toward individualization and increased exclusivity of property rights. This is because transaction costs related to commodity production and marketing can be reduced through concentration of the bundle of property rights and assigning it to a specific individual or corporation. This is especially true where existing organizational capacity is insufficient to ensure sustainable commodity production and marketing.

A case from Cameroon illustrates both of the “potential developments” that arise when lucrative market incentives become available which significantly deviate from the conventional uses, or scale of use of a natural resource stock, or both. First, forest dwelling communities were not in a position to invest and benefit from the international market for timber. Given the powerful incentives arising from sizeable potential profits, their property rights to forest resources were *challenged* (or perhaps more accurately, *ignored*) by those with the means to fell trees and move them into lucrative domestic and international timber markets. Second, rights to trees exploited for marketable timber, and the income from the trees, became the exclusive right of those who were willing and able to make the necessary investments. In the process, the bundle of property rights was consolidated as a single strand within the bundle—that to harvest trees to supply the international market for timber—came to dominate and diminished all other rights. The example illustrates a striking disconnect between existing property rights of indigenous forest dwellers and the usurpation of those rights necessary to respond to market incentives arising from a non-traditional market. Disregard for existing rights of forest dwelling populations, motivated by powerful market incentives, has wrought damage both to livelihoods of local populations and to the environment.

The Cameroon case illustrates the challenge of managing and channeling market incentives that, left unchecked, can aggravate unequal distributions of wealth and impair the capacity of some actors to gain livelihoods, as well as cause environmental degradation (see Box 5). While this example features forest resources, similar examples of market incentives being allowed free rein have occurred in a variety of natural resource settings ranging from fisheries to watersheds, pastures, and agricultural lands. Efforts to alleviate the adverse impacts of unmanaged market incentives have focused on recognizing and strengthening local actors in relation to non-resident entrepreneurs who are considered to have less interest in addressing local welfare concerns and maintaining resources over the long term. Closely allied sets of initiatives include those targeting increased popular participation in natural resource governance and management, decentralization and devolution of power and authority these resources, and reinforcement of the concept and practice of commonly held property.

Although common property of natural resources is most often a prominent feature of customary tenure systems, it has proven difficult to defend in the face of intense market incentives coupled with government policies that are not supportive of common property regimes. The leading tool in making existing rights defensible is to channel the market incentives to the resident populations. Complementary tools include

Box 5. Managing Market Incentives

In Cameroon, forest-dwelling communities are among the most marginalized groups in society, and massive timber exploitation has brought them few benefits. Sixty-six percent of Cameroon’s population in forest areas lives below the poverty line. One option for communities to gain greater benefit is to subcontract commercial timber operators to exploit the forest but this exposes the enterprise to elite capture, with negative environmental consequences (as logging operators may try to recoup their investments by rapidly creaming off all the trees with marketable value). Isolated case studies suggest that communities could earn substantial incomes from forests if they took control of harvesting and processing themselves. This, however, requires organizational and technical skills far beyond the usual capacity of local communities, and might also require governments to provide safety nets for communities which get into difficulties (ODI 2002).

modification of the policy environment to recognize local rights, and strength technical and organizational capabilities of local populations so that they can participate in sustainable production, processing, and marketing of natural resource based commodities.

The retention and defense of common property holdings based on market uses of natural resources requires analysis and redefinition of the distribution of the strands included in the property rights bundle. Such redefinition is a prerogative of local authority structures, but a further challenge arises from the fact that such structures are not monolithic. It is already difficult to secure coveted property rights to marketable resources for geographically defined populations, but even that is just the first stage. The second stage is for the defined populations to work out distributions of rights and benefits among themselves, that both take account of all categories of stakeholders as defined by gender, ethnicity, and age and foster stewardship of natural resources and promote sustainable use practices.

Box 6. The Struggle to Graduate from Stage One

In 1989 a forest management cooperative was established in the Baban Rafi Forest, Niger, as part of an internationally funded forest management initiative. In addition to the many uses of the forest and forest products by local residents, the Baban Rafi Forest served as a large reserve of fuelwood marketed in neighboring urban centers, particularly the regional capital of Maradi. The fuelwood trade was at that time controlled by Maradi-based entrepreneurs who harvested wood through a mix of local and imported labor. The project design targeted transfer of property rights to trees and other forest resources to local cooperative. During the project this transfer succeeded partially, but mostly in *de facto* terms (that is, with support from the project and local government). The transfer never attained a *de jure* status. During its early years, the project focused heavily on securing the benefits of fuelwood trade for local populations.

The experiment to transfer market incentives to the local populations in the vicinity of the Baban Rafi Forest turned out to be a more complicated task than a simple transfer of property rights from state (which formally held *de jure* rights to most forests and trees in the country) to local populations. The cooperative was composed of inhabitants of seven villages with diverse histories, as well as several herding/farming settlements inhabited by a different ethnic group. Although a portion of the local population was indeed interested in securing revenues from the fuelwood trade, others were more interested in retaining or expanding access to pasture resources, while still others were primarily attracted by the prospect of tapping into reserves within the forest of potentially productive lands for agriculture. While each population segment enjoyed recognized sets of access and use rights regarding specific forest resources and zones, participation in cooperative management and activities came disproportionately from specific interest blocs, with competing interest blocs remaining aloof. In addition, the exclusively male cooperative leadership struggled with the question of how revenues from fuelwood sales, still quite minimal, would be utilized or distributed (from Elbow, 1994; and a subsequent visit to the site in 1995).

The struggle to get past Stage One (a policy change) and truly arrive at Stage Two (a functioning and self-sufficient system for group management of property rights to marketable resources) as illustrated by Baban Rafi Forest Cooperative (Box 6), is a struggle that has been repeated in countless interventions seeking to secure market incentives for local populations in the interest of enhancing their revenues and improving governance and management of natural resources. In part the constraint is the result of disconnect between limited project cycles and a long-term need for consensus and institution building. But perhaps the constraint could also be alleviated through reduced complexity and less ambition. In the Souti Yanfou Forest of Guinea, the non-local market for game has motivated hunters from another part of the country to overexploit local wildlife resources. In response, with the aid of an internationally financed natural resource management program, a local hunter's association was established to assert property rights over forest wildlife, including the right to exclude outsiders. Although new, the clear definition and targeted focus of the association's mandate encourage optimism that Stage Two management of the resource will be consolidated (Carter, 2004; document and personal communications).

See Child (2005) for examples of relatively successful cases of transition from Stage One to Stage Two in the context of wildlife management in southern Africa.

3.2.2 Harmonizing with Government Policies—Focus on Devolution/Decentralization

Decentralization refers simply to a shift of (natural resource management) authority from central to local governments. However the implications of decentralization for property rights to natural resources at the local level are crucial. First, decentralization initiatives have led to clarification and securing of property rights for local users. Most cases of decentralization involve identification and boundary delineation of lands and other resources used as collective properties (Oviedo, 2002). The physical extent of the rights can then be recorded in government registers, and rights of use groups of defined common property legally recognized.

Box 7. Closing Open Access Areas Through Decentralization

In the Philippines, a USAID-supported Coastal Resource Management Program supported rehabilitation of abandoned and underutilized mangroves through fishpond lease agreements provided to local communities. The local government units (provincial and municipal level government agencies) signed leases with local communities, securing their access rights to mangrove resources thereby providing these communities incentives for effective monitoring of this open access resource (CRMP 2003).

Such clarification of rights serves to reduce conflicts arising from unclear rights. Second, decentralization programs have reinforced management rights, and thus property rights of natural resource users. For example, under decentralization programs, local forest councils (in some cases newly formed) have been given authority to manage commonly held land and natural resources. While under most decentralization initiatives local village councils are expected to work with local governments in decision making, creation of rules of resource use, or in other cases monitoring and enforcement, in many cases critical use and decision-making rights are formally devolved to local communities. In other cases yet, decentralization programs have been designed to close open access situations, as for instance in the donor supported Philippines Coastal Resources Management

Program (see Box 7). Third, decentralization programs have strengthened property rights through clarification of rights characteristics, such as specification of a time frame. Although, the precise nature of newly defined rights to natural resource commons, specifically duration of these property rights, vary from country to country. In some cases rights have been granted for an indefinite period, as for instance indigenous rights in Brazil (Oviedo, 2002). In other cases, decentralization and devolution efforts have resulted in short (five year) or long-term leases. Another important feature is that a defined process for renewal generally accompanies the fixed time period. Despite variations, clarification of property rights characteristics and processes that may accompany the process of decentralization or devolution have helped to secure local level property rights, as expectations come to be standardized and shared between local and government actors. Fourth, in most cases, decentralization has resulted in the development of means for adjudicating disputes related to these property rights where such mechanisms did not already exist.

Decentralization of natural resources, and the increased security afforded by these rights, have provided critical incentives for local communities to manage their resources sustainably and in many cases to enhance the value of their assets. As noted in previous section, a number of key challenges remain. Marginal groups and (in many cases) women continue to lack equitable use rights or decision-making powers. This is mainly because long-standing local institutions have been internally inequitable, leaving women and specific ethnic or economic groups out of decision making.¹⁵ Decentralization and boundary demarcation brings concepts of

¹⁵ Meinzen-Dick et al. (1997) provide useful analysis on gender differences in property rights and control of income, and in particular, barriers that limit women's property rights. These barriers in accessing land and natural resources may be explicit (e.g., legislation preventing women's ability to inherit or transfer land); however, numerous less explicit constraints limit women's control and access to land and resources. Some examples include restrictions on women's participation in local institutions (such as village councils) responsible for governance of resource use, either due to social norms that limit women's place to private domain or due to time constraints linked with responsibilities for domestic chores; limited access to education and information; or limited access to money to acquire credit and investments.

exclusive rights to resources, often giving preference to settled agriculturalists over pastoralists. These initiatives have also given preference to primary right holders over secondary users that may reside farther away from the resource. In some cases, community leaders have participated in corrupt deals to advance personal interests. In other cases decentralization has placed an increased burden on local communities without providing additional rights (such as requiring regular forest management plans). Finally, where customary rights to a natural resource spill across village boundaries, devolution targeting the village level can have unanticipated consequences, as illustrated in the proposed community forest for the village of Kwinella Nya Kunda (Box 8).

Box 8. Challenges Remain

In the 1990s Gambia's forestry Department, with technical assistance from the German government, began a program to establish a series of community forests. When the village of Kwinella Nya Kunda selected a five square kilometer area within its territory as the location for a community forest, the neighboring villages of Taba Nani and Madina Anglais strongly objected. As stated by the Alkalo of Taba Nani, *we have more than 1,000 cattle which have traditionally grazed in this area. The borehole for our cattle is there [in the area of the proposed community forest]. Our cattle track is there. This is very serious. We are willing to fight to preserve our access to this grazing area. We have no other choice because to our west is Mutaro Forest Park and to our south is the Casamance [Senegal] (M'Boge and Sheehan, 1995, p.63).*

3.2.3 Building on Customary Property Rights Regimes

Throughout Africa and much of the non-Western world, village-level customary property rights regimes reveal sophisticated land and resource tenure systems. Local tenure regimes are often made to adapt or modify themselves in reaction to (or defend themselves from) national policies, but by and large property rights remain based on, or derived from, customary practices.

Examples of elaborate local property rights systems abound in Guinea and elsewhere. For instance, in Sogolouou village of Guinea's Forest Region, *ownership* of arable land for cultivation of upland rice is shared among three clans (Fischer, 1995). Yet production decisions, such as number and location of parcels cultivated in a given year (regardless of ownership), are the prerogative of a council of elders that is representative of the three clans in proportion to their respective populations and historical importance in establishing the village. No village, clan, or member has the right to transfer either use rights or ownership rights to an outside party without the consent of the council of elders (consent which researchers reported would not be considered in the foreseeable future). Beyond the rice-producing agricultural lands is a ring of multipurpose resources dominated by palm, fruit, and other species of trees. Here too, use rights are strictly defined regarding, for example, the exact date on which specified groups (sometimes defined by sex, age, or profession such as blacksmith or healer) and individuals may begin to harvest palm oil or wine, or collect fruits or honey. Pasturing livestock is also tightly regulated. Certain forested areas are designated as off-limits to all but a select group of traditional healers and rites managers, except during precisely timed and entry-controlled rituals such as initiation rites. Any deviation from existing rights and uses must come from the council of elders that is entrusted with the governance of village land and natural resources.

Variations of the Sogolouou model, which features a cohesive and coherent local system of land and resource tenure, are found in rural areas of non-Western countries. However, the tenure system in Sogolouou is more intact than most customary tenure systems facing challenges from incompatible national policies, or economic and market developments and trends. It is striking that Sogolouou is able to maintain the institutions, consisting of customary authority systems such as the council of elders and extended family heads, necessary for enforcement of property rights rules. Another striking feature at Sogolouou is the community's control over non-land renewable natural resources such as trees and pastures.

It is precisely ownership and management of non-land resources that have been the most challenged by government policies in much of West Africa. France imposed laws in her West African colonies asserting state control of all resources that did not lend themselves to individual possession and control, such as streams, aquifers, pastures, mineral resources, and forests. For example, France introduced the first forest code for West Africa in 1935 which established principles such as lists of protected species of trees, and forest reserves within which preexisting popular use rights are circumscribed and ownership rights become the exclusive reserve of the state. Such policies, retained and usually reinforced by most post-independence governments, make it difficult for customary-based common property rights and their enforcement institutions to successfully defend property claims and management prerogatives (Elbow and Rochegude, 1990).

Compounding the challenge posed to customary common property is the French institutional tradition of land legislation, dating from the earliest years of the twentieth century, which couples the principles of *vacante et sans maître* and *mise en valeur*. The former principle declares that uninhabited and unused land belongs to the state (the vast majority of land during the relatively underpopulated colonial period); and the latter principle stipulates property rights to land have validity only where the land is put to productive use. Given that the leading productive use (*mise en valeur*) of land in more humid areas of West Africa was crop cultivation, this specific use of land, which carried the benefits of property claims recognized by customary and statutory rights systems alike, was further enforced.

As are many customary property rights systems concerning both land and non-land natural resources, Sogoloo's tenure system retains a high priority on sustainable use of resources. In Sogoloo, rice cultivation locations are selected annually (rotated) with the goal of preventing overuse of fragile soils. Systems for rotation between rice and other crops, as well as fallow periods, are maintained to keep the soils fertile. Use of palm and fruit trees, pasture, and water sources all fall under the authority of the same institutions, which manage them to achieve the same sustainability goals.

The challenge is how to capitalize on the existing diverse customary property rights systems in the context of targeted natural resource and developmental goals. The short answer is, **with caution**. This is because customary systems are not only difficult for the outsider to grasp, but they are also moving targets since those responsible for managing them constantly fine-tune them to accommodate changing political, economic, and ecological conditions. Customary property rights systems, moreover, often enjoy a near monopoly on legitimacy in the eyes of local users, and therefore should *not* be ignored. A productive strategy to support valuable local institutional capital involves incorporating enabling frameworks into statutory land tenure systems that allow flexibility of customary systems.

It is worth highlighting in this regard that customary systems often involve local-level decision makers accustomed to gathering and processing information from their environments and then applying it to adjust those systems on an as-needed basis. Central governments can shed the burden of modifying institutional arrangements to sets of local-level decision makers, most of whom have strong incentives (e.g., concern for the welfare of their children and grandchildren) to keep customary systems "healthy." This can free up central resources to (i) provide extension support to actors in customary systems so that they can continue to enhance/preserve their production systems; and (ii) provide modest but regular supervision to counter temptations (to which local elites might succumb) to modify customary systems over time in ways that principally benefit their children and grandchildren at the expense of others' offspring. Note that devolving authority for adjusting customary systems to local decision makers engaged in those systems radically reduces the transaction costs which otherwise often serve as powerful impediments to timely adaptation.

There are two general approaches to building on customary systems: wholesale formalization of existing rights; or a phased, monitored, and managed series of encounters between formal and informal systems. The long-standing initiative in Niger to elaborate a comprehensive Rural Code based on customary rights represents the former approach. Launched in 1985, the code's *framework* was enacted into law in 1993. In the meantime there was much jockeying for position among customary rights claimants once the word was out that rights were to be frozen (Lund, 1995). Groups with privileged access to power, education, or information

positioned themselves to prepare for formalization of their property claims vis-à-vis competing groups. The initiative has stalled several times in the face of the complex technological, financial and other resource requirements to fully implement a system to formalize customary rights. At the same time conflicts surfaced based on the multiple claims inherent in most customary systems. While potentially laudable undertaking, it could also be argued that Niger's Rural Code process is both overly ambitious and somewhat misguided in attempting a wholesale formalization multiple, overlapping and diverse property claims. That initiative runs the risk of *petrifying* the existing (or manipulated) pattern of land and resource rights by perhaps inadvertently, *driving up the transactions costs of adaptation*.¹⁶ If the only way to modify existing allocations of rights in the face of changing economic, political and sociological circumstances (e.g., the impact of the HIV/AIDS pandemic) is to *redo the Rural Code*, then this initiative will very likely reduce flexibility in land and natural resource tenure arrangements that might arguably be characterized as a *sine qua non* of survival in a very harsh desert-edge environment. These aspects are both complex and *non-trivial*. Program designers are advised to bear these in mind because failure to do so can wreak havoc with institutional arrangements that have helped generations of people survive in bleak, apparently impoverished environments across the globe.

In contrast to Niger's initiative to produce a comprehensive Rural Code, a project supported effort in Guinea introduced the concept and tool of written *tenure contracts* as a first step toward formalization of existing rights between landowners and land borrowers.¹⁷ In a completely voluntary program, introduction of tenure contracts was proposed on the assumption that it was in the interest of both borrower and owner to define and formalize a lending period and any other conditions pertaining to the land loan. Often a landowner lacked the labor to work a piece of land but hesitated to run the risk of losing historical ownership claims by lending parcels to those who could mobilize the required labor. The land borrower, on the other hand, was usually borrowing for an undefined period, and therefore could lose access following any given growing season. This practice discouraged investments in land and management efforts that would promote and consolidate sustainable use practices. Project-supported leases were designed to permit any time period mutually agreed upon by owner and borrower. The first years following introduction of the leases formalized time periods of as little as five years, or in a few cases, one year. But each year of the project, as participants became used to the arrangement, the time periods lengthened, and in some cases were specified for as long as 99 years. A few pieces of land were even transferred in perpetuity. Note that the Guinea *flexible* contracting experience, by contrast with the Niger Rural Code initiative, encouraged experimentation. Given the minimal transactions costs involved in adapting leases to incorporate longer terms as both lenders and borrowers gained familiarity with and confidence in this contractual arrangement, both sets of parties adapted leases in an appropriate manner to lengthen the period of contractual commitment. This outcome is highly appropriate: land borrowers now have the confidence to make productivity maintaining or enhancing investments in leased parcels because they have, within a flexible leasing structure, the *investment security* engendered by a negotiated and contractually fixed period of control over the leased parcel. Owners, on the other side of the arrangement, establish written proof of title and achieve greater assurance that borrowers will not run down but rather improve leased parcels *because they have compelling incentives to do so*. These results will need evaluation in a decade; at the moment they suggest that appropriately flexible enabling frameworks produce positive results for the labor-poor landowners, the landless but labor-rich, and the biophysical

¹⁶ France during the inter-war period employed ethnographers and anthropologists to gather data on and describe land and natural resource tenure arrangements throughout its West African colonies. Many colonial administrators seized on those studies as ways to cut through the complexity of customary systems without realizing the damage they were doing to customary tenure systems by stamping out flexibility in the name of "certainty."

¹⁷ The Expanded Natural Resources Management Activity (ENRMA) was implemented from September 1999 to September 2005. ENRMA was financed by USAID and implemented by the Government of Guinea and Winrock International. The land tenure contract component of the ENRMA built on earlier research conducted by the Land Tenure Center, University of Wisconsin-Madison.

environment. These are significant achievements. Landowners and users “win” as individuals but also derive *collective benefits* from productive management of land.¹⁸

There are numerous benefits of the land tenure contracts: (i) the terms are solely at the discretion of the contracting parties and not imposed by central authorities who are ostensibly promoting development or environmental goals; (ii) they are simple and clear; (iii) they represent a step toward enhanced security in land holding (for both owners, whose historical rights are acknowledged, and borrowers, who have access to arable land for at least a guaranteed minimum time period); and (iv) they open the door for similar formalization between private parties wishing to identify, have recognized and secure rights to a variety of land and other natural resource transactions.

3.2.4 Balancing Equity and Efficiency

Sometimes solutions to natural resource concerns present tradeoffs between efficiency (the greatest social value for the least social cost) and equity (relative distribution of resources among individuals and groups, particularly socially disadvantaged and marginalized groups). However, these two sets of issues are not inherently in opposition to one another, and in many cases appropriate enabling arrangements enhance efficiency in land and natural resource use while simultaneously addressing equity issues effectively.

A debate that has long dominated the property rights discussion focuses on the efficiency and equity outcomes of private or state property versus common property resources. Many commentators argue that private property or state control and managed regimes are more efficient than common property resources (Hardin, 1968). To that end, private (individually) alienable property rights and market exchange have been promoted in the belief that these will enhance decision-making powers for the rights holders, and thus provide critical incentives to avoid inefficiencies in the system. Common property regimes on the other hand are often characterized as inefficient; as not providing individuals proper incentives to invest and act in a socially efficient manner. Three main sources of inefficiencies associated with common property rights have been identified (Ostrom, 2002): (i) rent dissipation, that is, inability to capture value from communal use; (ii) high transaction costs of controlling and excluding non-members, as well as enforcement costs in terms of devising, monitoring and applying rules that encourage sustainable use; and (iii) low productivity, that is, lack of incentive to invest in a resource or even to benefit from that resource. Ostrom maintains that these are problems that all common property arrangements have to overcome.

Careful analysis of common property rights suggests that where associated institutional arrangements are strong, such rights can help achieve very high degrees of efficiency in use of natural resources. Indeed, well-functioning common property regimes are often characterized by high legitimacy, high levels of voluntary compliance, low levels of disputes, resilience and ability to adapt to changing socioeconomic contexts—particularly sudden shocks such as droughts (McKean, 1992), as well as greater sense of equity in terms of distribution of benefits derived from resource (Gibbs and Bromley, 1989). Furthermore, resources such as pastures, where costs of monitoring and enforcement may require extensive investments, group governance may be more cost-effective than governance by individuals.¹⁹ Moreover, rural poor in particular are heavily dependent on common property resources for their livelihood. For these communities, governance and management costs are often outweighed by benefits derived from governing and managing the resource (Hanna, 1995). Given repeated failures in management of state-owned resources and in many cases excessive exploitation of resources by states, common property regimes provide relatively effective systems for management of natural resources and prevention of ecological degradation in specific circumstances.

¹⁸ For a more detailed discussion of formal recognition of customary rights, see Fitzpatrick (2005), Toulmin et al. (2002), and Toulmin and Quan (2000).

¹⁹ In arid pastures, in particular, where rainfall patterns are unpredictable, dividing common property pastures into individual parcels may well be doomed to failure. Extensive pastoral systems are often the only *efficient* production systems in such circumstances.

No clear pattern emerges regarding distributional equity of various property rights regimes. Private property rights have, however, tended to favor elites and relatively privileged segments of society, leading to exclusion of the socially disadvantaged from adequate resource access. State property has typically tended to exclude rural communities from resource access. In some cases, state-ownership and privatization of resources has led to conflict as local communities attempt to gain control over a resource. Inefficiencies due to inequitable resource distribution can rise dramatically in such instances. Common property rights in many instances provide rural communities access and control over critical resources; yet resource governance and management institutions (councils and user committees) in many cases do not represent users adequately, nor do they share decision-making powers or distribute benefits among members appropriately. Rural elites dominate many local institutions and have traditionally excluded the poor and marginalized from decision making and prevented fair distribution of resources. Indeed, since institutions are a reflection of the social system in which they are embedded, inequities in institutional arrangements reflect social inequities of the particular social unit.

Arriving at solutions to natural resource governance and management that promote both equity and efficiency is rarely simple or without risk. Indeed, efforts to secure property rights for rural populations frequently feature cases of distorted transaction costs and misallocation of benefits that benefit one group in the population while further marginalizing others. But room for hope exists. Examples from the Brazilian Amazon (Box 9) and Senegal and Burkina Faso (Box 10) in West Africa, suggest that site-specific factors can be critical to raising or lowering the transaction costs involved in defending the customary property rights of secondary rights holders, and can thus decisively affect the equity outcomes of initiatives targeting increased efficiency. Among these factors are state policies that favor primary rights holders (Senegal), and the capacity of secondary rights holders to organize themselves in defense of a cause esteemed to be legitimate based on customary practices (Burkina Faso). Increased attention and care in dealing with such factors can lead to more equitable outcomes.

Box 9. Achieving Equity and Efficiency in Brazilian Amazon

Under Brazilian law, indigenous reserves are owned by the state. However, statutory law recognizes indigenous claims of exclusive, indefinite use rights over land and natural resources in these reserves of the respective indigenous groups. The law also provides authority to indigenous groups for governance of the resources within the reserves (Oviedo, 2002). Efficiency and equity outcomes of indigenous systems in conservation are evident in a study of inhabited indigenous reserves and uninhabited government protected areas in the Brazilian Amazon conducted by Nepstad et al. (2006). Satellite imagery of 149 reserves (121 of these indigenous reserves) and 15 government protected areas show that there was no significant difference in deforestation and forest fire losses between the two sets of areas, despite the fact that the indigenous reserves face greater pressures from colonization by non-indigenous populations and agricultural expansion from outside of indigenous reserves than do state protected areas in the region. Indigenous lands account for five times as much area as that contained in government protected reserves in the study area, yet indigenous institutions are effective in monitoring and preventing encroachment. Policy enabling inhabited reserves also promotes equity by enabling these otherwise marginalized communities to derive their livelihoods from secured access and control of these reserves.

Box 10. Seeking Equity and Efficiency: a Tricky Quest with a Potential Payoff

Many countries implementing land reform policies favor sedentary communities and primary rights holders at the expense of pastoralists and holders of secondary rights. It was believed that securing rights of settled agriculturalists would provide incentive for investments in farming, as well as access to credit, and hence promote agriculture-based economic growth. In Senegal, such land policies have secured rights of settled farmers, while disenfranchising the pastoralists. Customary practices that allowed for coexistence and socioeconomic relations characterized by reciprocity are being replaced by exclusivity. Traditionally, pastoralist rights to fodder were recognized, while farmers benefited from the manure derived from the livestock. At the same time, land policies and resulting titling and registration efforts have not led directly to improved access to rural credit, increased farm productivity or economic growth. Meanwhile unrecognized and insecure pastoralist rights to pastures and rangelands are deteriorating into open access situations, in some cases being encroached upon by farming (Traore, 2002).

A more positive trend is seen in efforts of the Sourindow-Mihity pastoralist community in northwest Burkina Faso that is attempting to take back greater control over rangelands threatened by dam construction and clearing by migrant farmers. The community has sought legal recognition of pastoralist associations, developed rules governing access to and use of pastoral resources, ensured equity in the form of access to non-member herders and women, developed institutional arrangements for monitoring and enforcement of rules, and has actively worked to establish co-management of these areas with the state (Sanou, 2002).

It is important to note that various economic characteristics and attributes of the resource have implications for the appropriateness of property rights regimes. For instance, as Thomson (1992) notes, whether particular resource such as trees are most effectively held as private, public, or common property depends on how well access to the resource is controlled, and whether consumption of the resource is separable (between users), or not. Based on these criteria, resources that are easily managed as private do not benefit under common or public property regimes, creating management difficulties and unnecessarily raising transaction costs of collectively managing the resource. However, where trees produce a public good in the form of environmental services, private control and management may result in overharvesting of the resource, thereby undermining public benefit. In such cases, a common property regime and associated transaction costs may well be cost-effective.

3.2.5 Enforcement of Property Rights in a Changing World

Regardless of the property rights regime, robust monitoring and enforcement arrangements including a system of penalties, is crucial to sustainable governance of any land and natural resource, and appropriate enforcement of property rights. Also necessary are reliable systems of dispute resolution in the event that rights are challenged. These often require an enormous commitment of time and labor. Moreover, in areas, such as those governed by customary rights, where rules are flexible and prone to changes in space and time, and areas where numerous multiple rights may be associated with a single unit of land, enforcement of property rights becomes even more challenging.

There are three issues related to enforcement of property rights which merit consideration: (i) making rules and clarifying discrepancies in property rights; (ii) identifying appropriate institutions (including individuals or groups) who hold rights and (perhaps others that) bear responsibility for enforcing those rights; and (iii) identifying and assessing transaction costs of making, monitoring, and enforcing rules. Enforcement systems require adaptability and flexibility to enable them to adapt and respond to changing rules, conditions, and local contexts.

A key aspect of enforcement is rule making and limiting ambiguity by developing clearly stated rules that users can follow and designated authorities can enforce. In many cases, ambiguity and conflicting claims to resources arise as a result of discrepancies between the customary and statutory rules. Clarity in rules is

achieved by resolving discrepancies regarding the statutory-customary divide in natural resource management through adjustment of statutory policies. Resolving such discrepancies in favor of customary arrangements that resource users and rights holders support, and progressively clarifying rules of access to and use of land and other natural resources will gradually narrow opportunities for serious disputes over property rights.

Of particular concern in property rights enforcement are transaction costs, including costs of labor and time needed for rule making, monitoring compliance and enforcing rules in cases of infraction. As noted above, the characteristic of the resource and terrain is an important factor in assessing transaction costs. For instance, it is often easier to monitor harvesting activity on a lake than in the middle of a forest, since a single monitor can see farther across open water than through forested terrain. Furthermore, stationary resources such as individual trees, vines, and pastures are easier to monitor than mobile resources such as birds in forests, fish in lakes and streams, and wildlife in watersheds, particularly migratory wildlife populations that easily move across more than one international or resource border. The more difficult it is to monitor a resource, the greater the risk of unauthorized activity and the harder (more costly) it is to establish robust institutional arrangements for monitoring.

States with large land holdings, large expanses of privately held lands, open water resources (typically open access), and commonly held lands and natural resources may be particularly challenging for these reasons. Where states are responsible for monitoring and enforcement, lack of finances for monitoring and resolving disputes is often a critical obstacle to effective governance. Moreover, such official systems often lend themselves to corruption. Hybrid user/official monitoring and enforcement systems frequently prove less corrupt and more effective in dissuading or sanctioning illicit uses. Individuals holding private rights may experience similar problems of financial constraints where large extents of lands are involved. In many cases, community-based systems for commons management have been particularly effective in rule enforcement of relatively larger land areas, and have proved more effective than state or in some cases individual private systems. In common property systems, customary practices of monitoring and enforcement typically involve sharing responsibility among members. In customary systems, social relations and associated sanctions provide strong disincentives to violation of rules *if* monitoring is effective. Furthermore, perceived legitimacy of the customary systems lend for greater voluntary compliance, and lowering of enforcement costs. Many programs therefore look to strengthen local institutions of governance, and community-based participatory approaches to monitor and resolve land and natural resource related disputes. Such local alternatives are not more compatible with customary rules and more accessible for local communities, but they ease burden on the judicial court systems (FAO, 2002a).

Disputes over resource use are typically resolved by village institutions and elected or appointed authorities particularly where customary rules are involved, and by formal courts in cases of statutory rule enforcement. Many other cases of disputes over natural resource use are not brought to court, and may linger on or be resolved by local councils. Given that in some countries, particularly in the post-conflict contexts as in Burundi and Rwanda, disputes over land and natural resource account for approximately 80-90 percent of cases received in courts (ACTS 2005), dispute resolution problems should not be taken lightly. In these countries formal court systems are overburdened, with insufficient capacity to handle the numerous cases of disputes related to land and natural resources. A weak enforcement system casts doubt on the security of property rights and hence engenders disincentives that dissuade people from engaging in sustainable practices.

Gambia provides an instructive example. This country has made efforts to uphold a comprehensive enforcement and dispute resolution network that respects customary law throughout the country, while at the same time advancing cautiously toward more formal laws and institutions. The 1990 District Tribunals Act established a *tribunal* for each district in the country. Each tribunal is presided over by the district chief, known as the *Seyfo*, assisted by six or seven local residents whom he nominates. The district tribunals are empowered to ensure proper application and enforcement of customary and religious laws (Marong, 1994, p.7, emphasis is ours). Despite its mandate to base its decisions on customary laws, the tribunal courts would quickly be overwhelmed if it were not for the government-sanctioned and continuing existence of a network

of informal enforcement and dispute resolution institutions that provide the bulk of dispute resolution services in Gambia, thus alleviating the workload of the tribunals. As noted by Marong:

Dispute resolution in the customary setting is not the exclusive domain of the District Tribunal. Several informal systems exist within the traditional system which operate significantly to curtail the number of cases that otherwise the tribunals would have had to cope with.... These systems are not established by any statute or other law and therefore lack the binding legal force that characterizes the operation of the District Tribunals, yet they have been so fully and completely accepted by the traditional people that the effect has been that adjudication by the more formal judicial system has become a matter of last resort and comes mainly when the informal mechanisms discussed hereunder have failed to work (p.13).

The informal dispute resolution institutions include family elders, the village *Alkalo* (traditional chief) and the local Imam (religious leader). While most disputes are typically resolved at this informal level, in cases where disputes go beyond the informal level to the district tribunal, rulings continue to uphold customary laws. For example, among the principles followed by the tribunals is that *whenever there is a dispute over ownership of land and there are elderly people who know the tenure history of the land, they are called to give evidence before the tribunal as to the question of ownership* (p.15), as illustrated in the example provided in Box 11.

Box 11. Giving Legitimacy to Historical Evidence

The Court attached significant weight to the evidence of a 90 year old witness who deposed that the defendant's family were the original clearers of the land in dispute and that he knew that defendant's father cultivated the disputed land up to his death and thereafter the defendant himself farmed it for over 30 years. The Court gave judgment for the defendant. This case illustrates not only the approach of the District Tribunals to the evidence of particularly knowledgeable witnesses, but also the principle that original clearing of the virgin forest confers customary ownership of the land (Marong, p.15).

District tribunals in Gambia also have authority to resolve disputes involving non-land natural resources. Often the tribunals must weigh established customary rules against principles of fairness and in favor of compromise, as illustrated in Box 12.

Box 12. Disputes Over Ownership of Planted Trees

Disputes often arise over ownership of planted trees. As the Imam of Dumbutu related, when a man who has planted a tree subsequently dies, another person (possibly the owner of the land) can assume the responsibility of watering and caring for the tree. If, after some time passes, the son of the man who planted the tree claims ownership of the tree, a dispute may arise in which the caretaker claims ownership of the tree. As the imam of Dumbutu stated, customary law would uphold the ownership claim of the son. The act of watering and caring for the tree does not confer rights of ownership over the tree. The son of the tree planter would inherit the ownership rights to the tree (M'Boge and Sheehan, 1995, p. 43).

Continuing challenges remain however as customary systems experience socioeconomic transitions. This weakens social relations (and hence social sanctions), gives rise to labor shortages occasioned by male labor migration, and in turn poses a serious challenge for many rural communities in governing commonly held resources. Given that local governance systems are often more effective and efficient, and typically more adapted to changing needs arising from emerging land and labor markets, natural resources markets, and environmental initiatives and interventions than are state systems, customary institutions can be assisted to adjust to the scale and methods, and to adapt to these changes. A final example of the adaptability and flexibility of customary dispute resolution systems also is provided by Gambia (Box 13). This kind of equity

jurisprudence is common in African moots where officials frequently try to structure reasonable compromises, and unreasonable or wasteful demands are rejected.

Box 13. “My Trees, Your Land”

This dispute was settled by the Upper Baddibu District Tribunal. The dispute involved a landlord and a tenant over a question of tree ownership. A member of a compound planted mango trees in his backyard bathing area. For reasons unrelated to the tree plantings, relations between the compound head and this particular member deteriorated, and the member was asked to leave the compound. Upon leaving, he demanded compensation for his trees, a demand to which his ex-landlord could not concede. The expelled member took his claim directly to the district tribunal. [Based on customary rules], [t]he district tribunal ruled in favour of the member seeking compensation. The tribunal brought in professional tree appraisers to assign a value to the trees and then ordered the compound head to buy the trees from the expelled member. However, the expelled member decided that he did not want to sell the trees. Instead, he demanded that the tribunal restrict his ex-landlord from picking fruit from the trees. The tribunal questioned whether this would be an acceptable [i.e., reasonable] solution. [In a modified decision], [t]he tribunal advised the tree owner to share his use rights with his ex-landlord, much to his dismay (M’Boge and Sheehan, p.55).

4.0 GENERAL PRINCIPLES FOR INTEGRATING AND REINFORCING PROPERTY RIGHTS IN NATURAL RESOURCES GOVERNANCE AND MANAGEMENT

Wherever human populations interact with the natural world, they develop systems to organize and regulate access to and use of finite renewable natural resources. Such organizational and regulatory systems respond to and internalize external economic, political and institutional environments, and internal social structures and production systems. To the extent that it is intact and functioning, a property rights system determines the identity of legitimate resource users, and the scope and parameters for resource use, management, and transfer. But as societies evolve, property rights systems face challenges and may vary widely in performance and functioning. Moreover, a system of property rights to natural resources is just one among the many factors that affect sustainability of natural resources, incentives for wealth creation and empowerment of rural populations. Thus property rights systems influence, and are influenced by, market incentives, government and project policies, technological developments, and local organizational capacities, as well as other factors. The interplay between property rights and trends or developments taking place in any of these areas can result in unanticipated outcomes regarding environmental, wealth and governance objectives.

Application of a number of property rights principles is recommended to minimize undesirable and unexpected outcomes to natural resource initiatives. These principles are identified as follows:

1. *Understand existing property rights systems before launching a natural resource program.*

Wherever stocks of natural resources exist, some type of property rights system that governs—or attempts to govern—access, use, management, and transfer of natural resources *nearly always exists*. Information regarding local property rights rules and their enforcement is usually fairly easy to come by. Questions posed to individuals who are observed acting as resource users are a good place to start. More than one property rights system may be in operation at the same site, which may include seasonal rights (e.g., pastoralists). Often *overlapping* and perhaps *competing* property rights systems exist in relation to given natural resource set. It is important to recognize these overlapping claims to land for the different strands of a bundle of property rights, as well as communal rights to resources.

2. *Recognize and build on customary property rights.* In non-Western countries *customary* property rights systems frequently retain *de facto* or some cases *de jure* authority and institutions that continue to regulate and enforce property rights related to local natural resources. Customary property rights systems often retain more coherence and legitimacy than competing systems and events. Whatever the orientation of national policies, customary practices remain in effect in many settings. In addition, customary property rights systems are durable, exhibiting desirable characteristics of *flexibility* and *adaptability* as they evolve in the face of changing economic, social, and political environments.

3. ***Be aware of the characteristic flexibility of customary systems.*** Customary property rights systems are flexible in time and space, and generally feature the property rights system that is adapted and adaptable to local ecological, social, cultural, economic, and political contexts. While legal recognition of customary systems can in many cases reinforce security of property rights and reduction of legal “gray areas,” detailed codification of a customary system can oversimplify and freeze rules *at a point in time* that normally change *over time*, thus undercutting the subtleties and dynamism of the system.
4. ***Provide incentives for sustainable management to user groups by securing property rights.*** An appropriate property rights regulatory system channels and enhances positive incentives for sustainable governance and management of resources. Access to and use of the resources should be clearly defined and rights based, but will most appropriately be derived from—rather than a replacement of—existing property rights rules and institutions.
5. ***Where possible, clarify property rights, reducing (potential) conflict over land and natural resources.*** Identify and address existing conflicts due to overlapping claims. Where possible identify and acknowledge users of various resources, in particular secondary resources that are often overlooked. Harmonize plural legal systems such that property rights emerging from the various legal systems lend for consistent rules. In practice, any new statutory rules and laws that are designed take full consideration of customary rules already in place. Such harmonization is, and should be, an important aspect of clarifying and securing property rights.
6. ***Pay particular attention to duration of property rights.*** Secure long-term property rights are needed to create and consolidate local incentives for long-term investments. Short-term property rights are not conducive to long-term investments.
7. ***Avoid displacement (reduction or elimination of property rights) wherever possible.*** Reduction or elimination of property rights should be avoided. Reduction or elimination of property rights have enormous potential for creating poverty, livelihood insecurity, and conflict. Where such changes in rights are necessary, assess current property rights of various primary and secondary users of land and natural resources in the area and provide meaningful compensation.
8. ***Recognize diversity of solutions.*** No single model is appropriate or applicable in all situations and places. Assess tradeoffs of various property rights regimes, and associated factors such as government capacity for enforcement of laws (particularly in relation to private property), strength of local institutions (particularly in relation to communal lands and resources), and incentives and disincentives associated with various property rights regimes.
9. ***Strengthen local institutions.*** Where possible strengthen local institutions of natural resource governance. While efficient common property institutions ensure high levels of equity and sustainability of resource management, their effectiveness is influenced under certain social and institutional settings, and by specific attributes of the resources and members involved. Institutional arrangements are strengthened by making them more transparent, accountable, inclusive, and responsive to local needs. Local institutions should be assisted to become more equitable, particularly in heterogeneous communities (prevent capture of resources by local elites). Where necessary, local institutions and user groups should be provided necessary training in monitoring, conflict resolution, and consensus building. In addition, public oversight of resource exploitation may be necessary; however this will be more effective in the form of support to local efforts than the traditional policing of land and resources. One of the least costly and most effective strategies available to central governments to strengthen local institutions is to promulgate enabling frameworks that formally recognize existing customary systems for land and renewable natural resource and provide backup enforcement and dispute resolution services on an as-needed basis. Such measures quickly and effectively revive customary systems by underlining their legitimacy in the eyes of the formal legal system. Customary systems whose rules and monitoring and enforcement activities are protected from unlimited contestation will have considerably greater resources

available to carry on their activities. In other cases, an ideal combination of state and community control may be explored to ensure social equity and environmental sustainability.²⁰

10. *Promote property rights regimes that allow for equity as well as efficiency.* Equity, efficiency, and sustainability cannot be attributed to any particular regime by itself. Private, state, and common property regimes have their respective roles, and provide different benefits. When assessing benefits of a rights regime, it is essential to take into consideration the characteristics of the resource, range of right holders involved, range of potential users, and the diversity of resources derived from the region. Care must be taken to ensure that securing rights of one group does not serve to marginalize others. In addition, transaction costs of enforcement of rules should be seriously taken into account as they weigh very heavily on the viability of customary renewable natural resource and land tenure systems.

11. *Where possible promote solutions that go beyond efficiency and equity; empowerment of rural poor can bring many long-term benefits.* While efficiency and equity are important dimensions of ideal property rights regimes, regimes should consider concerns of rural empowerment and moving communities beyond dependency and a pervasive sense of helplessness. Such solutions bring enormous social and economic benefits. In addition, long-term sustainability (rather than short-term gains) should be considered important variables in the equation.

Awareness of the above principles and observations will enhance understanding and facilitate the response of natural resource managers as they grapple with project or program implementation issues across a variety of contexts. While every situation is unique, these principles shed light on existing practices and constraints for which a practical response can be identified.

²⁰ Some authors have explored the principle of subsidiarity in decision making on natural resources, that is, decisions be made at the most local level possible in order to minimize costs at higher socio-political, and administrative levels (Ribot, 2004). According to this principle, where there is lack of skilled human resources at the decentralized level, and where macroeconomic policies such as taxes and quotas need to be considered, the central government may be a more appropriate management entity (FAO, 2005).

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