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THE COMMONS, PROPERTY, AND COMMON
PROPERTY REGIMES

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I. Introduction

There can be no more important aspect of scholarship than that of concepts and language. If scholars use the same words or terms to describe fundamentally different fact situations, ideas, or phenomena, then progress in understanding is impeded rather than advanced. In the literature on natural resources and environmental policy, it would be difficult to find an idea (a concept) that is as misunderstood as that of the commons and common property. The mischief to arise from the continuing failure to understand common property is perverse in both scholarly discussions, and in public policy formulation. On the former front, scholars will show no hesitancy to expound on the problems inherent in common property without the benefit of first defining property, and without betraying any understanding of the historical and contemporary facts surrounding common property regimes. On the practical side, scholars will show equal confidence in advising all who will listen about how to "solve" the so-called tragedy of the commons. This mischief is then perpetuated among politicians who, as Keynes put it, are under the thrall of some now defunct economist. While this may be a bit strong, there is cause for serious concern when policy recommendations are predicated upon false problem definitions.

The literature is full of casual references to common property resources as if this were a universal and immutable classification--almost as if the prevailing institutional form were somehow inherent in a natural resource. Never mind that in one place trees and fish and range forage are controlled and managed as private property, in another setting they are controlled and managed as state property, in another setting they are controlled and managed as common property, and in other settings they are not controlled or managed at all but are instead used by anyone who so desires to use them. There is no

such thing as a common property resource- - there are only resources controlled and managed as common property, or as state property, or as private property. Or, and this is where confusion persists in the literature, there are resources over which no property rights have been recognized. We call these latter resources open access resources (res nullius).

The key concept here is property. Property is a benefit (or income) stream, and a property right is a claim to a benefit stream that some higher body--usually the state--will agree to protect through the assignment of duty to others who may covet, or somehow interfere with, the benefit stream. Rights have no meaning without correlated duties and the management problem with open access resources is that there are no duties on aspiring users to refrain from use [Bromley 1989a, 1989b]. Property is not an object but is rather a social relation that defines the property holder with respect to something of value (the benefit stream) against all others. Property is a triadic social relation involving benefit streams, right holders, and duty bearers [Hallowell 1943]. It is for this reason that I urge us to consider the concept of property regimes. Regimes, after all, are human artifacts reflecting instrumental origins, and a property regime is fundamentally instrumental in nature. That is, property regimes take on their special character by virtue of collective perceptions regarding what is scarce (and hence possibly worth protecting with rights), and what is valuable (and hence certainly worth protecting with rights). Property is a social instrument, and particular property regimes are chosen for particular purposes.

The fallacy in traditional approaches to the commons is that writers have failed to understand the concept of property, they have very often treated a particular natural resource as if it had inherent characteristics that

suggested it would everywhere be controlled under a particular type of property regime, and they have invariably failed to learn that the world is replete with reasonably successful common property regimes.¹ By successful I mean that the natural resource has not been squandered, I mean that some level of investment in the natural resource has occurred, and I mean that the co-owners of the resource are not in a perpetual state of anarchy. In short, common property regimes exist and function very much like private property regimes and state property regimes. That is, some are not working very well, while others work very well indeed.

Our purpose in organizing the Panel on Common Property Resource Management in the Developing Countries (under the auspices of the National Research Council of the National Academy of Sciences) was to determine if indeed there were any reasonably successful common property regimes operating in the world. If we could answer that question in the affirmative, then much conventional wisdom and folklore would be seen to be false. I am pleased to note that our effort seems to have predated--and partly inspired--a renewed interest in institutional arrangements over natural resources.² The creation of this Association, and this conference, are clear evidence that property regimes are high on the research agenda of social scientists.

In the remainder of this paper, I wish to focus on property regimes as authority systems. This emphasis is necessary for the simple reason that the essence of property rights is a structure of rights and duties that will give any particular benefit stream protection against adverse claims. And where does that protection come from if not from the "state"? By this I do not necessarily mean some remote central government. I mean simply a unit of coercion that has the legitimate sanction to enforce structures of rights and

duties. With common property regimes there are two levels at which this unit of coercion must operate. At the boundary of the regime, it is essential that the property rights of the regime itself possess legitimacy vis-a-vis the larger political and economic environment. This dimension assures that non-owners (non-members of the group) will not be able to benefit with impunity from the resource under a common property regime.

Inside the regime, coercion operates to hold members in check in their use of the natural resource. Recall that in a group regime one has no rights unless one also has duties. Some may regard common property regimes as essentially "cooperative" in nature and hence the idea of coercion within the group may appear incongruous. But of course the problem here is with the idea of "cooperation." Farmers on an irrigation system--a classic case of a common property regime--certainly compete for scarce water and in this sense cooperation may seem irrelevant. But on closer inspection the idea of cooperation can be seen as similar to compliance in that each irrigator cooperates by complying with the internal rules of water allocation among competing interests. Farmers cooperate for the simple reason that in the absence of this shared structure of rights and duties there would be anarchy.

Let me now turn to a discussion of authority systems and property regimes.

II. The Decline of Authority Systems: An Historical Overview³

Much of early human history was characterized by self-conscious natural resource use, in which people would move, or they would take extreme actions (infanticide, imposed "family planning") to control their total demands on the natural resources on which they depended. The first major break in this

pattern of indigenous (and clearly self-conscious) resource management appeared with the gradual breakdown of internalized social mechanisms for controlling resource demands, a process that was greatly abetted by the rise of powerful leaders presiding over large territories that transcended traditional "villages." Natural resources came to be regarded as sources of revenue instead of merely sources of sustenance for the local population. Many such rulers sought to create quasi-military states, an exercise that required the generation of considerable revenue. These accumulators of wealth relied on two general sources for their income--the agricultural produce of their subjects, and the export of whatever natural resources were available. And this brings us to the second aspect explaining the break with the past.

Colonial powers were, about this time, plying the tropics for a variety of products, not least of which was wood. The revenue desires of the new territorial rulers fit nicely with the material needs of European nations. When supply uncertainties--or higher prices--were not to the satisfaction of the more powerful nations it became expedient to impose more direct rule. Colonial administration is not inexpensive and in many instances it was required to pay for itself out of locally generated revenues. This brought colonial administrators directly into the business of resource exploitation to cover the costs of their presence. These two forces--first the rise of powerful territorial rulers, and then the appearance of colonial administrators--both accelerated the deterioration of village-level social conventions that had previously acted to control resource use. It was necessary for alien (whether regional or European) sources of power and authority to undermine and destroy local systems of power and authority; otherwise, the legitimacy and authority of the alien power would be

compromised and challenged. These changes--territorial governments replacing local-level administration, and in its turn colonialism, largely destroyed any vestiges of real authority residing at the local (or village) level.

My point here is that villages have, over time, lost their ability to be the locus of control and authority over the actions of their residents with respect to natural resource use and management. Not only were villages undermined by remote centers of political and economic power, but forces also led life at the village level to become individualistic. As the village became more atomized--more individualized--it became increasingly difficult to take the necessary, and customary, collective actions to address natural resource shortages. As populations grew, aided by new medical technologies that reduced infant mortality, many collectively managed "village" lands were invaded and illegally appropriated by families--a process that was facilitated by the powerlessness of the village management regime to prevent such incursions. The poorest segments of the village, afraid or unable to privately appropriate the village "commons," were left behind and forced to rely, increasingly, on the poorest lands that remained in the shrinking commons. With the collective area shrinking because of illegal "privatization," a rapidly increasing population was forced to rely on an ever-smaller area. Small wonder that deforestation and resource degradation resulted.⁴

What do I mean by the village as an "authority system"? In India, for example, the village had been a territorial concept, not necessarily identified with any particular group of households or families. Households had a common and customary obligation to one another in both social and economic matters. The essence of village life was a structure of both

permission and restraint, within which all human endeavor operated. Prevailing status and authority systems left few in doubt as to their domain of choice in a number of private and public affairs. Indeed, one could argue that the very purpose of a village was to serve as a unit of control and cooperation such that the welfare of the group would be enhanced. The village served as an economic and social unit of great significance to the use and management of land and related natural resources.

This significance can be understood by considering the relationship of rights in land to the political structure of the Indian village; those who owned no land were socially and economically subordinate to landholding interests. Within this stratified structure the village community still enjoyed an effective system of self-government. The secret of its success lay in the nature of property in land and the various other allied institutions that subsisted in the village. As long as rights in land were governed by rules and customs which prevented the emergence of great disparities in wealth and income the system of self-government remained efficient. But a change in the institutions of landed property led almost immediately to the decay of this self-governance.⁵

The effectiveness of the village as an authority system was dependent upon the exercise of influence and control over actions of individual members of the community. Prior to colonialism, ruling monarchs/leaders exercised control over the political and economic life of villages. The villages were not only suppliers of necessities for such leaders, but local outposts of control and authority over scattered peoples in the hinterland. The political legitimacy of the ruling entity was secured through the extension of

representatives down through the political structure of regional town, and ultimately, rural village.

There was always the need for revenue to support the activities of the ruling class. During that time the question of who actually owned land was not as important as it was to become. The availability of surplus agricultural land served to relieve population pressure against the land. To be sure, population growth has diminished the feasibility of this option.

In India, the disintegration of the important role played by villages can be traced to the introduction of new land laws, the related intrusion of urban interests into the rural village, the opening up to external trade and markets, and the centralization of revenue and judicial administration leaving the village councils with little or no formal role. With the full spread of colonialism, much of this political and economic structure--already under stress--was finally destroyed. The essence of colonial administration was to harness the political power of the villages to secure legitimacy for the alien power. It became necessary to undermine existing authority systems responsive to the pre-colonial rulers, and to supplant them with authority systems that would be responsive to the interests and imperatives of the colonial administration.

The individualization of village life, fostered by the privatization of the better village lands, left the peasant increasingly dependent on the market, and on the moneylender. It would not be correct to assume that all of these forces leading to the disintegration of the village were the result of colonial rule; many changes were underway prior to colonial administration. But of course the subsequent introduction of new land laws and the civil courts sealed the fate of the villages as a locus of administration.

In Africa, the French were particularly contemptuous of indigenous structures and institutions. In northwest Africa (what we now know as Algeria, Tunisia, and Morocco) the French encountered a thinly settled nomadic (or pastoral) peoples in the dry mountainous regions of the hinterland. The French claimed a portion of the lands unclaimed by the tribes or claimed only on the basis of custom, while the tribes were given firm title to what remained to them. This process restricted tribal territories and led to increased crowding of the nomads, and also insufficient space for settlements. As with other colonial administrations, the French wanted to individualize titles to land, and this structure eventually evolved into a form of both government and private colonization. The government side of it entailed the establishment of entire new villages in barren areas, but the private colonization was the more important. In 1873 the French sought to break up collectively owned lands by decreeing that individual plots must be established to become the private property of individuals under French law. If only a single collective holder desired individualization, then it was required to occur, regardless of the wishes of the other collective owners. The result was a plundering of tribal properties, and an increase in lawsuits. In the process, Frenchmen, but also urban Algerians and other notables, acquired large estates. French land holdings doubled in the twenty years between 1870 and 1890--from 800,000 ha to 1.6 million ha. By 1930, 26,153 Europeans owned 2.3 million ha, compared to 7.7 million ha owned by only 617,543 Algerians [von Albertini, 1982, p. 268].

The British in West Africa were not markedly different. In the far west of Africa--the Gold Coast--cocoa production expanded rapidly because it fit in well with the traditional economic and social structure. Lots of land

"belonged" to the tribes, villages, and clans, but the produce from it went to the individual farming family. Immigrant families "rented" land, cleared the jungle, and planted both foodstuffs and cocoa seedlings, which bore fruit in 4-6 years. But erosion and a retreat of the forest began. Additionally, more profound changes were underway. Food production declined and the production for export began. Cash became prevalent, and the individualization of land holdings was not far behind.

The story of colonial administration of village political and economic life was similar--impose European institutional arrangements so as to: (1) encourage the cultivation of those crops of interest to the colonial administration; (2) provide tax revenues to support that same administration; and (3) undermine indigenous political structures and processes to further strengthen the position of that colonial administration. These transformations essentially destroyed the village as an autonomous decision-making unit, which was, of course, the very reason for those imposed institutional changes; the destruction was purposeful.

Once colonialism gave way to national independence--largely in the two decades following World War II--prevailing systems of authority at the village level were once again in need of modification and realignment with the new imperatives and interests of a national government. The disruptions destroyed, yet again, evolved relationships of power, influence, and authority. During these eras of creation and modification of local-level systems of authority and control over daily life, populations were expanding rapidly, and technology was altering the way in which people used--and interacted with--their environment. At the very time when the ability to control individual behavior at the village level was at its lowest,

populations were expanding and the pressure on the natural resource base was accelerating. Degradation of forested areas was the predictable outcome.

The new independent nation-states that arose following World War II have shown little interest in revitalizing local-level systems of authority. As with previous rulers and colonial administrators, the governments of these nation-states do not relish the thought of local political forces that might challenge the legitimacy and authority of the national government. This means that many forested areas have become the "property" of the national government--an act of expropriation when viewed from the perspective of the residents of millions of villages. This expropriation is all the more damaging when the national governments lack the rudiments of a management capability. These new governments are struggling with the problems of governance, economic development, self-sufficiency, and political stability. In this setting, we see resource destruction continuing--and even accelerating.

In the Ivory Coast, commercial loggers have long engaged in wanton high-grading of timber stocks, leaving the lesser-valued timber for others to poach and burn so as to provide agricultural plots. As the better stocks have disappeared the value of recent timber marketings has fallen, putting yet more pressure on the remaining stands so as to sustain export earnings. These practices have--in a familiar pattern--been legislated against, but only indifferently enforced. In fact, since independence the Government of the Ivory Coast has pursued an extremely destructive course of action toward its forests so as to earn foreign exchange and tax revenues. As a result:

. . . loggers continue to exploit the remaining forests, more or less uncontrolled, and farmers have followed roads developed for logging operations, establishing cocoa, coffee and food crops, with the widespread practice of "slash and burn" farming. Such intrusions have

also begun in the classified forest reserves and national parks. Government now estimates that this process transforms about 0.4 million ha of unspoiled high forest per year. Were these trends to continue, Ivory Coast could become a net importer of timber before the end of the century [World Bank, 1985, p. 2].

The World Bank Report continues by pointing to a persistent practice in renewable resource management--showing more interest in the symptoms of problems than in the root cause of those problems. Specifically, we are told that the continued degradation of forests poses scant ecological threat. However, it is reported that the subsequent invasion by land-hungry farmers imposes severe damage on the remaining forest cover causing increased soil erosion, reduced rainfall, and lower water tables. Hence, the "Government is becoming more conservation-minded in its approach to forestry in particular, and to natural resources in general [World Bank, 1985, p. 3]." Notice that while the government is unwilling to threaten the political power of the commercial loggers who savage the forest, the entrance of small farmers into the cleared space is viewed as an important ecological crisis that motivates the Government to become "conservation minded." Is it easier to get "conservation minded" against farmers than against loggers who generate foreign exchange and commercial timber?. There seems little interest in dealing with the conditions that cause farmers to invade the cleared forest. But it is clear in the Government's mind that the farmers are the "enemy" of the forest. "Conservation" then becomes an anti-farmer activity, doing little to endear it (conservation) to the masses in the villages upon whose shoulders the success of such programs will ultimately fall. It would seem more reasonable to undertake development interventions to deal with the land-use problems of the farmers than to blame them for degradation and set them

against conservation. Successful forest management programs in the developing countries must be coincident with farmers' interests, not opposed to them.

III. Property Rights as Systems of Authority⁶

I am concerned with authority systems precisely because a natural resource regime is an explicit (or implicit) structure of rights and duties characterizing the relationship of individuals to one another with respect to that particular resource [Bromley 1989b]. New institutional arrangements are continually established to define the property regime over land and related natural resources--whether that regime be one we would call state property, private (individual) property, or one of common property. These institutional arrangements define (or locate) one individual vis-a-vis others, both within the group (if there is one), and with individuals outside of the group. By thus defining one individual's choice domain vis-a-vis that of others, property rights indicate who has the legitimate authority to act in a predetermined manner. This authority, coming as it does through officially recognized property relations, carries the implicit backing of the state. Officially sanctioned property rights mean, at bottom, the willingness of the state to step in to protect the interests of those holding the property rights under discussion. Without effective (or credible) enforcement one has anarchy; small wonder that the relentless theme of the propertied classes down through history has been to insist that the primary function of the state is to protect private property. One can search in vain for the dispossessed making a similar argument.

We can define property relations between two or more individuals (or groups) by stating that one party has an interest that is protected by a right

only when all others have a duty. It is essential to understand that property is not an object such as land, but is, rather a benefit stream that is only as secure as the duty of all others to respect the conditions that protect that stream. When one has a right one has the expectation in both the law and in practice that their claims will be respected by those with duty. For most purposes it is sufficient to consider four possible resource regimes: (1) state property regimes; (2) individual property regimes; (3) common property regimes; and (4) non-property regimes (open access).

State Property Regimes

In a state property regime, ownership and control over use rests in the hands of the state. Individuals and groups may be able to make use of the resources, but only at the forbearance of the state. National (or state) forests, national (or state) parks, and military reservations are examples of state property regimes. Shifts from state property to other types, or vice versa, are possible. For instance, the 1957 nationalization of Nepal's village forests by the government converted a common property regime at the village level into a state property regime.⁷ The state may either directly manage the use of state-owned natural resources through government agencies or lease them to groups or individuals who are thus given usufruct rights over such resources for a specified period of time. The "tree growing associations" created experimentally in West Bengal (and elsewhere in India) consist of groups of landless or marginal farmers who are given a block of marginal public land for tree planting are examples. The members are not granted land titles, but the group is given usufruct rights on the land and ownership rights of its produce [Cernea, 1985].

State property regimes are characterized by the separation of ownership and control (management) from actual use. That is, "ownership" resides with the citizenry at large, management and control resides with a class of bureaucrats, while use resides with a subset of the citizenry.

Individual Property Regimes

Individual property regimes are the most familiar to many of us, though of course much "individual" property is, in fact, co-owned by spouses. Those who see ultimate wisdom in private property must answer for several phenomena. First, much of the world's landlessness is not attributable to an absolute physical scarcity of land but rather to its ownership concentrated in the hands of a few powerful families. This is especially prevalent in large parts of Latin America. Second, we are often told that private property leads to the "highest and best use of land." With large segments of Latin America's best agricultural land devoted to cattle ranching, skeptics may be excused if they challenge that particular truth. Notice that individual property is not necessarily--as Proudhon put it--"theft", but a good deal of theft has ended up as individual property--especially in the western world where European colonizers appropriated vast terrain inhabited by tribal peoples.

The best land in most settings has already been privatized and the worst has been left in the "public domain"--either as state property, as common property (res communis), or as open access (res nullius). It is not legitimate to ask of common property regimes that they manage highly variable and low-productivity resources, and also to adapt and adjust to severe internal and external pressures when conditions beyond the bounds of that common property regime preclude the adaptation to those internal and external pressures. That is, the "internal pressure" of population growth may be

impossible to resolve if traditional adaptation mechanism--hiving off for instance--are now precluded by increased population growth beyond the confines of the common property regime under study. Likewise, if private property and associated fences prevent the traditional movements of a people and their livestock it is hardly legitimate to blame them and their property regime. Private property regimes appear to be stable and adaptive because they have the social and legal sanction to exclude excess population, and effectively to resist--through the power of the state--unwanted intrusions. These powers have been eroded for common property regimes. To see the exclusionary aspect of private property, recall the effects of primogeniture. The dispossession of younger sons (to say nothing of all daughters) is regarded as a costless social process and therefore it looks as though private property is robust and adaptable; it "works." Private property in such a setting may "work" for the oldest son; but those with no rights in the estate may be harder to convince.

Common Property Regimes

The third regime is the common property regime (res communis). First, note that common property represents private property for the group (since all others are excluded from use and decision making), and that individuals have rights (and duties) in a common property regime [Ciriacy-Wantrup and Bishop, 1975]. In one important sense then, common property has something very much in common with private (individual) property--exclusion of non-owners; common property is corporate group property. The property-owning groups vary in nature, size, and internal structure across a broad spectrum, but they are social units with definite membership and boundaries, with certain common interests, with at least some interaction among members, with common cultural norms, and often their own endogenous authority systems. Tribal groups or

subgroups, villages or subvillages, neighborhoods, transhumant groups, kin systems or extended families are all examples. These groupings hold customary ownership of certain natural resources such as farm land, grazing land, and water sources.

Corporate group property regimes are not incompatible with private, individual use of one or another segment of the resources held under common property. For instance, the ownership of certain farmland may be vested in a group, and the group's leaders may then allocate portions of the land to various individuals or families. As long as those individuals cultivate "their" plot, no other person has the right to use it or to benefit from its produce. But notice that the cultivator holds use rights only (usufruct) and is unable to alienate or transfer either the ownership or the use of that land to another individual. Once the current user ceases to put it to good use the land reverts to the jurisdiction of the corporate ownership of the group.

The essence of any property regime is an authority system that can assure that the expectations of rights holders are met. The presence of compliance through the expedient of an authority system is a necessary condition for the viability of any property regime. Private property would be nothing without the requisite authority system that makes certain the rights and duties are adhered to. This same situation exists for common property. When the authority system breaks down--for whatever reason--then common property (res communis) degenerates into open access (res nullius). It is not the property regime that explains compliance and "wise" natural resource use. It is, instead, the authority system that insures that the particular property regime is adhered to. In private property regimes the owner can always call on the coercive power of the state to assure compliance and to prevent intrusion by

non-owners. In common property regimes two problems may arise. The first is that a breakdown in compliance by co-owners may be difficult to prevent because of the loss of opportunity arising from changes elsewhere in the economy. If spreading privatization precludes seasonal adaptation to fluctuating resource conditions then overuse of a local resource may be necessary by members of the group. Secondly, if the state holds common property in low esteem--that is, if the state disregards the interests of those segments of the population totally dependent upon common property resources--then external threats to common property will not receive the same governmental response as would a threat to private property. The willingness of the state to legitimize and protect different property regimes is partly explained by the state's perception of the importance of the citizens holding different types of property rights. If pastoralists are regarded as politically marginal--a reasonable hypothesis in many parts of the world--then the property regimes central to pastoralism will be only indifferently protected against threat from others. If those threatening pastoralist property regimes happen to have more favor from the state then protection of common property will be haphazard at best.

Open Access Regimes

Finally we have the open access situation in which there is no property (res nullius). Because there are no property rights in an open access situation, it is logically inconsistent to assert--as many often do--that "everybody's property is nobody's property." It can only be said that "everybody's access is nobody's property." Whether it is a lake fishery, grazing forage, or fuelwood, a resource under an open access regime will belong to the party to first exercise control over it. The investment in (or

improvement of) open access regimes must first focus on this institutional dimension. If property and management arrangements are not determined, and if the investment is in the form of a capital asset such as improved tree species or range revegetation, the institutional vacuum of open access insures that use rates will eventually deplete the asset.

Open access results from the absence--or the breakdown--of an authority system whose very purpose was to assure compliance with a set of behavioral conditions with respect to the natural resource. Valuable natural resources that are available to the first party to effect capture have become open access resources through a series of institutional failures that have undermined former collective management regimes. There is no authority in an open-access regime. Governments who have appropriated forests from local-level management bodies--primarily villages--and have then failed to manage them in an effective manner have created de jure state property, but de facto open access; the absence of effective management and enforcement has simply turned the forest into a resource that can be exploited on a first-come-first-served basis.

IV. Concluding Observations

There is a critical difference between open access resources and common property resources, and the difference turns on the very concept of property. Property is a future benefit stream, and hence there is no property in an open access situation, there is only the opportunity to use something. Many of us see situations of open access and improperly regard them as situations of common property. At the same time, most of us have seen common property regimes at work without recognizing them as such. Irrigation systems

represent the essence of a common property regime. There is a well-defined group whose membership is restricted, there is an asset to be managed (the physical distribution system), there is an annual stream of benefits (the water which constitutes a valuable agricultural input), and there is a need for group management of both the capital stock and the annual flow (necessary maintenance of the system and a process for allocating the water among members of the group of irrigators) to make sure that the system continues to yield benefits to the group. There could not be a clearer illustration of a common property regime than irrigation systems, despite the fact that they do not always work as well as they ought to.

Most often when we observe resource problems in the developing countries these situations arise under open access, not under true common property. An equally serious mistake is made in identifying the specific problem to be addressed. We will usually suggest that the problem is one of poor range condition, or a lack of water, or undernourished livestock, or a lack of fuelwood for cooking. Unfortunately, these are not problems but are rather symptoms of problems. Development assistance projects to fix symptoms do not fix problems.

The real problem is, in many of these instances, the absence of effective group management regimes necessary to allow the sustained use of the resource base over time. That is, an earlier situation of common property has deteriorated into one of open access. These resource regimes must bear the brunt of their own indigenous population growth, but often must also absorb those individuals displaced from other areas who can freely migrate. Because these migrants cannot, by definition, settle on private lands, there is no

other option open to them. Even if the migrants go to urban areas they must be supplied with fuelwood and/or charcoal which comes from the public domain.

An important question remains: why don't common property regimes always adapt to changing conditions in a way that will protect the natural resource? A corollary question, therefore, is why should such management regimes be supported through project interventions? The answer is quite obvious. To install or to support a particular property regime on the basis of its ability to resist external pressure is the wrong approach--especially when that pressure arises in a manner that is quite unrelated to the nature of the property regime itself. Collectives select property regimes on the basis of their suitability for the resource in question--its variability, its productivity, and so on. If we have learned anything over the past several years about property regimes it is that the choice of regimes must be based on the characteristics of the natural resource under consideration, and the characteristics and objectives of the human associations that interact with these natural resources. To think that there are universal truths about suitable property regimes--that is, to imagine that individual (private) property, or state property, or common property are always appropriate for specific natural resources--is to commit a most serious form of sophistry.

Our development interventions will be successful only if we approach the choice of particular property regimes with the idea in mind that such regimes are policy instruments rather than policy goals. We must, therefore, have a clear idea as to what the dependent population wishes to accomplish with respect to the particular natural resource under consideration. We must also understand the dynamics of the resource, and be certain how various degrees of use will affect its long-run viability. Any property regime is the legally

and socially sanctioned ability to exclude certain users, and so the fortunate owner(s) can force others to go elsewhere. Common property regimes, because they are predicated on groups, are less successful at excluding individuals in order to keep total resource demands in line with sustainable use. Private property regimes, on the other hand, have a longer history--and a social expectation--of excluding individuals. If exclusion of excess population is thought to be unacceptable, private property regimes appear to avoid the problem of exclusion through partible inheritance where plots are successively divided among heirs. The outcome of this process, however, is an ownership structure in which individual plots are too small to be viable economic units. Common property regimes, unlike individual property regimes, do not result in atomization, but rather seek ways to accommodate the increased population. Where this accommodation is successful the long-run viability of the resource is secured.

The challenge to the social sciences is to comprehend the interplay of human and biotic communities in such a way that we might better suggest property regimes that are propitious for both.

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NOTES

1. Though it would take us beyond the domain of natural resources, it must be understood that a private club is a common property regime. Such clubs, whether "country clubs" or more restricted collectives, are joint management regimes controlling assets, and allocating use rights among co-owners or members.
2. A recent book by McCay and Acheson documents a number of aspects of common property regimes. The World Bank recently undertook a review of its natural resource projects with common property characteristics (reported in Bromley and Cernea), and this author is now writing a paper for the U.S. Agency for International Development on the lessons of common property regimes for dealing with problems of the "global commons."
3. Parts of this section are taken from a forthcoming article "Property Rights as Authority Systems: The Role of Rules in Resource Management" [Bromley, 1990].
4. See Jodha for an account of the degree of privatization of common lands in India.
5. Gupta, Sulekh Chandra "The Village Community and its Disintegration in Uttar Pradesh in the Early Nineteenth Century," in: Readings in Indian Economic History ed. by B. N. Ganguli (London: Asia Publ. House, 1964).
6. Portions of this section are taken from Bromley and Cernea [1989].
7. However, in the absence of effective enforcement of the new property regime, coupled with the villagers' perception that "their" forests had been expropriated by the government, the resource became--for all practical purposes--an open-access resource which villagers felt free to squander.