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HARDIN'S MYTH OF THE COMMONS:
THE TRAGEDY OF CONCEPTUAL CONFUSIONS

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Introduction1

In 1968 Hardin made the claim that the "commons" as a form of property ownership resulted in environmental destruction and degradation. He proposed the thought experiment of a pasture open to all. Each herdsman would try to keep as many cattle as possible on the commons as he reaps the whole profit from the sale of his animal while the costs are spread among all those using the pasture.

Unfortunately, Hardin's argument is sociologically naive. He ignores the emergent and self-regulating nature of social organizations in response to such challenges, as in the example of stinting (also see McCay and Acheson, eds. 1987; National Resource Council 1986; Berkes 1989). Furthermore, his argument is historically uninformed. Commons of pasturage, as well as other commons, are in fact a form of private property (see Hoskins 1963:4; Dahlman 1980:23). And use of the pasturage, it has been claimed, was limited to each individual by the size of his arable holdings (Lord Ernie 1968:297, quoted in Dahlman 1980:23).[2]

Hardin's argument is also jurally indefensible and logically inconsistent as he ignores the actual locus of ownership of the various rights. He does not enquire what social entity holds the usufructuary rights and what social entity owns the residual rights. And he includes in his class of "commons" such diverse forms of property rights and open access resources as free parking during the Christmas rush, the leasing of grazing rights in national forests, the resources of

the oceans, the national parks, pollution of air, water, population growth (Hardin 1968), insurance, data banks, etc. (Hardin 1977).

Finally, he is just plain wrong when he concludes that private property or state management are the only solutions. He writes that while private property plus inheritance is unjust, "The alternative of the commons is too horrifying to contemplate. Injustice is preferable to total ruin" (Hardin 1968:1247). Subsequent critics have provided empirical evidence to demonstrate that these conclusions were ill-informed (see McCay and Acheson, eds. 1987; Berkes 1989; National Resource Council 1986).

Originally Hardin (1968) failed to define what he meant by the "commons" except by the examples he gave. Then in 1977 Hardin (1977:47) wrote that the idea of the commons is that "whatever is owned by many people should be free for the taking of anyone who feels a need for it." But the corporation would seem to gainsay this position.

The Developing Field of "Common Property" Scholarship

Hardin's claim was also far from new. Aristotle wrote in a similar vein. Nevertheless Hardin's "tragedy of the commons" provoked an upsurge of interest in the ill-defined concept of common property, which resulted in the publication of several critical recent books (National Research Council 1986; McCay and Acheson, eds. 1987; Berkes 1989; Bromley and Cernea 1989), survey articles (Berkes et al. 1989; Feeny et al. 1990), and the formation in 1989 of the International Association of Common Property, which holds yearly conferences.

Thus, although Hardin's article was conceptually flawed and empirically wrong, it provided the impetus for refocusing the age-old arguments over what modality of property ownership would provide the most efficient use of a resource with the least externalities on the one hand, and, on the other, what modality promoted the most desirable forms of liberty and social justice. The focus was now shifted to the debate on how property modalities contributed to environmental degradation and

the social costs of previously unexamined externalities to open access resources such as air and water. As a result, it revitalized the arguments over property rights and brought scholars from a number of disciplines into the argument including anthropologists, sociologists, ecologists, economists, development planners, geographers, political scientists, and biologists.

But long before Hardin's article the attack on community forms of ownership was prevalent in planning and development circles. With modernization in the Third World and spread of Western economic planning, claims of the efficiencies of private property over what was called "communal" or "common property" were common in the neocolonialist discourse of government elites, economists, planners, and others who wanted to rationalize, on their terms, the economies of peripheral peoples. And this universally occurred without sufficient knowledge of the peripheral property systems or their relationship to environmental processes. Such self-serving claims in particular

appeared and still appear in the discourse of the new elites of former colonies who want to privatize land tenure systems for the benefit of themselves and other members of the economic and political centers who have the cash to invest in former tribal lands (see Appell 1991b).

Thus, there is a substantial literature on the most efficient and productive uses of resources which largely ignores issues of environmental consequences and the impact that such rationalizations have on traditional cultures and their property rights (see Appell 1985). However, the developing field of scholarship in common property modalities tends to correct these deficiencies showing the utility of traditional forms of property ownership and the importance of indigenous knowledge of resource utilization. Thus, researchers have discovered indigenous efficiencies which in many cases are more productive and suitable to the local environment than planned development interventions, refuting Hardin's claim of the inevitable deterioration of the

environment under conditions of multiple ownership (see Johannes 1977; McKean 1986; Berkes 1985).3

Unfortunately, neither the external rationalists nor their critics have considered the social costs arising from disruption of local property systems. These include the social and health impairments that arise from the increased adaptation load put on a traditional population as it deals with externally introduced change. These costs are almost universally externalized to the larger society and are not included in the accounting of profits and losses of any project (see Appell 1986, 1988a).

However, the issue that this paper will address is the fundamental logical flaw in Hardin's argument. If a form of property ownership affects the productivity and conservation of a resource, then it is critical to identify precisely the property modality involved and particularly the locus of ownership before assessing its contribution to productivity and sustainability. But Hardin did not. In fact he showed incredible naiveté in the analysis of property ownership,

misunderstanding the actual nature of property relations for the phenomena he was attempting to analyze.

However, the arguments of Hardin's critics, as well as the political philosophers interested in distributive justice, are faulty in one key aspect, which they share with Hardin. They have also failed to consider two basic problems: the locus of property rights, i.e., who are the holders of the rights, and who, on the basis of this system of property relations, are responsible for managing the rights. Yet these are critical components in decisions made that affect the productivity and sustainability of a resource. Thus, if the argument is over what form of ownership results in the least damage to the environment and is the most productive, it is critical to determine correctly the structure of the property relations over a resource.

Definitions of "Common Property"

The term "common property" has been used to refer to a wide variety of institutional arrangements from

open access, which involves no rights of ownership, to any instance involving multiple users or multiple owners, or both. The critics of Hardin have made an important start at sorting out these issues of definition.

Berkes et al. (1989), expanded in Feeny et al. (1990), define common property resources as a class of resources for which exclusion of potential users is difficult and costly and joint use involves subtractability in that each user is capable of subtracting from the welfare of others. They then present a taxonomy of four basic property right modalities in which common property resources can be held:

1. Open Access: a resource without well-defined property rights so that access is free and open to all as with ocean fisheries of the last century.

2. Private Property: a resource held by an individual or corporation. This involves the right to exclude others from using the resource and regulation of its use.

3. Communal property: a resource held by an identifiable community of users who can exclude others and regulate use. Examples given include certain shellfish beds, range lands, forests, irrigation, and ground water.

4. State property: a resource in which the state controls access and level of exploitation.

Bromley and Cernea (1989) provide another definitional statement of common property in their critical study of the nature of common property natural resources (also see Bromley 1989). They define four possible modalities for resources: (1) state property; (2) private property; (3) common property which in essence is private property of a group; and (4) the non-property modality of open access.

The Analysis of Property Relations

Before I can put clothes on the charges here and unpack the various definitions of common property, it is important to present an analytical system for delineating property relationships that can be used to

isolate the cultural contours of any jural system without contamination from Western jurisprudence and its concepts.

A property relationship consists of: (1) a jural entity; (2) engaged either in a passive jural relationship with (3) all other jural entities at large, or with either a specific jural entity; (4) with respects to rights and their correlative duties; (5) over an object, which includes goods, services, and interests themselves; (6) sanctions, both positive and negative, that motivate the jural entity to enter the property relationship and protects his interests; and (7) a title, including the facts or events that have resulted in the acquisition of rights being vested in the present owner and the circumstances by which title may be extinguished. (See Diagram One).[4]

Forms of Jural Entities: The Loci of Property Rights

A jural entity, or jural isolate, is a social form that has the capacity to enter into jural relations, and thereby own property. The sum total of these

capacities is referred to as the jural personality of that social form (Durham 1958). For cross-cultural analysis I have identified three forms: the individual, the corporate group, and the corporation (Appell 1976; see also Appell 1983, 1984).

A corporate group is composed of a social grouping of natural persons that holds interests as an entity and not in severalty. A corporate group contrasts with a corporation in that a corporation is an artificial jural entity without a social counterpart. Neither the officers, nor the board of directors, nor the stockholders are the corporation.

Corporate groups must also be distinguished from those social groupings or other social forms in which rights to property are held by the individual members rather than by the group itself. Two types may occur: a jural aggregate or a jural collectivity. A jural aggregate is a social form in which the individual members hold the interests in severalty. It has no jural existence above and beyond its individual members; it cannot enter into jural relations. A jural

collectivity is a social grouping in which interests are also held in severalty by the individual members. But it differs from a jural aggregate in that its sociality is recognized by the jural system in which it is lodged. Thus, the jural system permits a member of that social form to sue on behalf of the other members to facilitate jural actions while still denying the grouping a separate jural status, a distinct jural personality.

Let me give two examples of this from the jural system of the Rungus of northern Borneo (Appell 1976). Rights to certain fruit trees are held individually by all the descendants of the original planter. I have referred to the rights in this system of co-ownership as parallel rights. Those holding the rights form a jural aggregate, for to receive compensation if the fruit tree is destroyed each of the right holders have to take jural action on his own.

There are other fruit trees with more valuable fruit that require guarding and cultivation to ensure that the descendants of the original planter can pick

the fruit. The descendant living closest to the trees has the obligation to care for and guard these trees. In return he has the right to pick the first fruit, after which he must inform the other right holders to come, if they want, to pick their share. The individual who guards the tree also has the obligation to bring a jural action for compensation if the tree is destroyed. He initiates this action on behalf of the other right holders. But they must be present at the time of the moot in order to be able to receive a proportion of the settlement. This is a jural collectivity as one person can take jural action on behalf of the other members. But it is not a corporate group, for the group as an entity does not receive the compensation, only those members of the collectivity who are present at the settlement.

The Property Relationship as a System

At various historical periods, legal scholars have focused on one or another of the parts of the property relationship rather than the whole system. For a period, the emphasis was on the subsystem of owner and object. Then it has shifted to the jural relationship between social entities (e.g. Macpherson 1978; Reeve 1986). However, it is the total system that is critical for understanding property relations, not just a part of it. The substitution of any one item at any aspect in the system will change all other items in the relationship. For example, the Rungus village holds residual rights over its land. If we substitute at the property focus trees, the entity holding the rights can no longer be the village and the correlative social entities change as do the rights. The locus of rights are instead the members of a descent collectivity, who hold rights in severalty primarily against other village members.

Analytical Critique of the Definitions of "Common Property"

As early as the 14th century the term common was used in two confusing senses (see *Oxford English Dictionary*) referring either to property that is public with no identified rights of ownership or to property belonging to more than one as a result of cooperation. And this confusion still works its deviltry in scientific discourse. Bromley and Cernea (1989) and Berkes et al. (1989), as well as the authors in National Resource Council (1986), in McCay and Acheson, eds. (1987) and in Berkes (1989), attempt to sort this confusion out for once and all. Open access is to be used for a resource where no property rights exist. Instead rights are created by usucaption of the resource. This occurs by taking possession of a property object from the open access resource, as for example in the case of wild animals, fish, etc.

Open access is the modality implied in Hardin's article, although not every case he gives is open access, particularly that of his paradigm case. Commonage of pasturage is instead an instance of use rights held by a set of individuals whose jural

definition as an aggregate or collectivity is not specified. Furthermore, the rights held are a result of being resident of a village. It is what I have termed a derived right (Appell 1976). Hardin also failed to specify the locus of the residual rights of ownership of the pasturage.

The classification proposed by Berkes et al. (1989) attempts to sort out these contradictions, but it has certain terminological difficulties. The term common property resources is an oxymoron. It refers to those resources which may be held under various property modalities. Yet, these modalities include open access for which no property rights by definition can exist (also see Feeny et al. 1990), even though they carefully point out that open access cannot be a form of property.

Other aspects of their classification of property modalities has certain confusions. While they define a common property resource as a class for which exclusion is difficult and joint use involves subtractability, they include private property held by an individual as

one of the property modalities for such resources. But private property is the paradigm case of exclusiveness. Thus, their classification involves certain logical contradictions.

The private property category of Berkes et al. (1989) and Feeny et al. (1990) contrasts with their category of communal property. In the former complete title is vested in an individual or a corporation. In the latter rights are divided among a community of users. Thus, private property contrasts with property of a community. There are several problems with this. It ignores property rights held by several individuals who are not a community, as in the case of property bought jointly by husband and wife, or by any set of individuals, as in the example of fruit tree rights among the Rungus. Or are the holders of these rights to be considered a community of users, rather than restricting the term community to a village community?

Furthermore, the attributes of the category of communal property are not sufficiently finely defined to make the jural distinctions found empirically. Are

rights here held by a village community as a corporation, or a corporate group, or as just a jural aggregate, or perhaps a jural collectivity? For example, in Borneo most villages own rights as a corporate entity over the land in which their resident member families have the right to establish limited or durable use rights. Use rights, rights derived from residence, lie with the village members as a jural aggregate or domestic families as jurally corporate groups. Furthermore, in certain instances among the Rungus a group of communities might share use rights to a forest reserve. How does this fit this type of classification?

Some scholars, write Feeny et al. (1990:5) use the term "common property" to refer to this regime of communal property. Unfortunately, this only adds to the confusion as the use of the term common property varies widely and its referents are so problematic.

Bromley and Cernea (1989) also use the oxymoron of common property resources in their important analysis of the problems in managing such resources and the

failure of Hardin's logic. They distinguish four possible resource regimes: state property, private property, common property, and non-property, or open access. As do others (e.g. MaCay and Acheson 1987) they make the point that Hardin and other social scientists have frequently confused open access with "common property" modalities.

Their class of private property includes property held by individuals as well as property administered by a group. They do not make the distinction between corporate property and corporation property that I have made. Nor do they directly address property held by a corporation, as do Berkes et al. (1989). However, they include as private property ownership by a group of individuals which Berkes et al. (1989) relegate to "communally owned property."

Bromley and Cernea write (1989:14): "Common property is in essence 'private' property for the group and in that sense it is a group decision regarding who shall be excluded... Common property is <u>not</u> the free-for-all of open access resources. Individuals have

rights and obligations in situation of common (non-individual) property, just as in private individual property situations. The difference between private and common property is not to be found in the nature of rights and duties as much as it is in the number to which inclusion or exclusion applies."

Thus, you have two of the four contrasting classes, private property and common property, sharing the same attribute, being private property, which precipitates certain confusions. But just as critical a failure of logic is to segregate one class of property, common property, in terms of number of holders of rights and duties, while using locus of the right, i.e., state or no owner to classify other modalities.

Berkes et al. (1989) and Bromley and Cernea (1989) have made singularly important contributions to the argument on the productivity and sustainability of common resources. But they present confusing classifications of property-right modalities. These also fail because they do not identify the exact locus

of ownership. Neither Bromley and Cernea (1989) in their class of common property nor Berkes et al. (1989) in their class of communal property distinguish whether the rights are held by individuals, as a jural aggregate or jural collectivity, or held by a corporation, or by the group corporately. To determine the locus and the nature of the rights involved requires painstaking investigation into jural cases pertaining to the property relations, particularly in the case of non-written jural codes. Yet it is the very rights and duties and the form of jural entity for their loci which affect the management of the property resource. And to determine these is crucial to the ultimate goal: the understanding of management forms and how they affect productivity and resource degradation.

Furthermore, while they all refer to ownership in which rights are split between different legal persons, they do not analyze this and its implications when dealing with multiple users. The result is that while

these classifications have helped to clarify the terms of the argument, they need to be revised.

Fragmented Ownership: Forms of Rights and Objects of Ownership

While Berkes et al. (1989) and Bromley and Cernea (1989), recognize the problems of multiple types and levels of rights, they have not systematically analyzed the various forms of multiple ownership. And they have not delineated the structure or relationships between the various right holders. Yet this form of analysis is fundamental to understanding how common resources are held and is basic to understanding the efficiency and effectiveness of the management of resources in terms of productivity and conservation. But these authors are not to be condemned for failing to sort this matter out, for legal scholars themselves have been inconsistent, contradictory, and far from analytical on this problem. So again a more useful and universal conceptual framework has to be developed as with the nature of jural entities.

When two or more jural entities hold interests in the same object, legal and anthropological scholars have used such terms as split ownership (Honoré 1961), divided ownership (Goodenough 1951), multiple interests (Cribbet 1975), co-ownership (Lawson and Rudden 1982; Megarry and Wade 1984; Salmond 1957), concurrent ownership (Casner and Leach 1969; Cheshire 1962), and so forth. Seldom does the use of these terms cover the same territory. In fact the terms concurrent, as in concurrent interests, and co-ownership are frequently restricted to forms of ownership peculiar to the Anglo-American system of law which include tenancy in common, joint tenancy, and tenancy by the entireties, all of which have special, limiting attributes. For example, in tenancy in common the interests may be devised to heirs, while in joint tenancy there is survivorship, in that the co-owner or co-owners succeed to the interest on the death of one of them.

When there are multiple interests of any kind in a property object, I refer to this as co-ownership. In co-ownership there is the issue as to whether there are

multiple rights so that each of the co-owners individually owns rights in the object or benefit stream from the object, or whether the co-owners share a single right. A shared right involves the ownership by all of a single right, as in partnerships (Salmond 1957:306) and joint rights.

When multiple rights exist in an object or benefit stream, two forms may occur: parallel rights and stratified rights. These are not mutually exclusive. Parallel rights refers to the situation in which the co-owners hold identical interests. Such "co-owners have simultaneous interests in every portion of the thing, but no separate interest in any particular portion of it" (Cribbet 1975:94), or what is referred to as having an interest in undivided shares of the object.

What distinguishes holders of parallel rights, or for that matter holders of a shared right, from a corporate group is that the interests lie with the individuals and not with the group as an entity.

In the instance of stratified rights, two or more jural entities hold interests of a different order in the same object as is the case with villages in Borneo. It is common for a village practicing swidden cultivation to hold residual rights to a distinct territory as a corporate group. Only the members of that village may cut their swiddens in that territory. The right to cut swiddens is a parallel right held in some societies by the individual members and in others by domestic families as corporate groups. The use rights over the area cut may be held only temporarily, lasting only until the last crops of that year are removed, or they may be durable in that they may be devised on other generations or held theoretically in perpetuity by the corporate domestic family. Another example of both parallel and stratified rights is provided by interests over those types of fruit trees among the Rungus that require care and cultivation. But in this case the rights are held by individuals as a jural collectivity, as we have discussed. All descendants of the original planter have parallel

rights to collect the fruit. The descendant living closest to the tree takes care of it and has the prior rights to the first fruits in exchange for his care before he calls the
other right holders to participate in collecting the fruit. These rights to fruit are consequently stratified. Parallel interests and stratified interests are thus not mutually exclusive. Each type of stratified interests over an object may also have co-owners who hold parallel rights or even a shared right. (See Appendix One in which these variables are diagrammed to provide clear examples.)

It is also critical to our understanding of property modalities and their environmental consequences to develop an analytical grid of the objects of ownership. It is common to use terms such as: movables and immoveables; tangible and intangible; consumables and nonconsumables; durables and depreciable; and productive and nonproductive. Unfortunately, these are terms deprived from Western jurisprudence. There has been little work done on

developing an analytical grid of property objects that is cross-culturally valid so that we do not yet know how useful these concepts are. But see Berkes 1986 for a useful analysis of the fundamental aspects of resources that lead to the development of property relations.

The Contaminated Concepts of Common Property and Private Property

Historically, the term common property in everyday usage implied that no property rights existed over a resource and it contrasted with private property, property held by an individual. It was generally applied to indigenous populations by explorers and colonists, who did not bother to determine what native rights over property existed, and it signaled that the resource was open for the taking. This misconception and confusion has continued on until today, as in Hardin's arguments, which his critics have tried to sort out.

In 1493 Christopher Columbus wrote with regard to the Indians he encountered, "I have not been able to learn if they hold private property" (quoted in

Berkhofer 1978:6). Then an anonymous author of a report of his 1496 voyage to America, in which for the first time the term America was used, wrote that the Indians own everything in common (see Arber 1885; also see Zolla 1973). Thomas Morton writing in 1635 (printed in 1637) reported that the Indians "make use of those things they enjoy, (the wife only excepted,) as common goods" (quote from Adams 1883:178). James Hall writing in 1935 used the same discourse. The Indians "must, indeed, be tutored into a sense of private property. For '...the insecurity of property, or rather the entire absence of all ideas of property, is the chief cause of their barbarisms'" (quoted in Pearce 1988:72).

Thus, discourse in which the terms common property and private property appear are at rock bottom part and parcel of an expanding colonialist and individualist ideology that informed Western expansion from the very start of colonialism. As folk categories they carry with them an unexamined load of assumptions and ideological contaminants which make them useless for

understanding property relations. For example, Johannes (1977:121) writes: "One of the reasons that legal confusion exists in this area is that traditional Pacific island customs concerning coastal marine resource use are quite at odds with traditional western legal concepts. The average westerner tends to assume that his customs concerning property rights have a kind of universal validity, other systems commonly being regarded as primitive. I would like to show why, in this instance, it is traditional western laws that are primitive."

Malinowski (1926) Firth (1959), Hoebel (1954), and Bohannan (1969) have all warned against using such folk concepts of Western jurisprudence to understand other jural systems as they distort the actual indigenous forms of ownership. These are not fundamentals in themselves, as Hoebel (1954:51) wrote, and they are unsatisfactory substitutes for clear analysis of the complex niceties of legal institutions.

This is illustrated by the research of Pauline E. Peters in southern Africa. She reports on how the

colonial models of preferred land tenure have permeated the debate in Botswana since 1975 on the use of grazing land, distorting the actual incidents of local ownership.

Peters (1987:179) writes: "The belief that certain collective or corporate forms of social organization and property relations stifled initiative and/or encouraged lackadaisical and careless use of resources was generally held by colonial officers, missionaries, and traders. It was embedded in an ideology that regarded private ownership as the superior opposite of communal forms, and whose premises were based on a long history of Western thought. It was through this lens that problems were diagnosed--overgrazing, irresponsible management of wells (including, from the 1930s, deep borewells), and low standards of husbandry, especially with respect to the breeding and culling of stock. Through that same lens, prescriptions for change were conceived and announced: the introduction of new forms of exclusive land tenure and the private ownership of wells. With hindsight, one can see that

these were constructions of a reality projected by the colonialists themselves, who persistently tried to squeeze African landholding systems into a model that set private and individual in opposition to communal and group."

Peters (1987:174) concludes that "A model based on the dualism permeating Western thought (individual vs. society, private vs. communal, self-interest vs. altruism, ideal vs. actual) fails to provide the analytical tools necessary to understand the paradoxes and conflicts in Botswana's grazing areas," or I might add any property relationship (see also Berkes and Favar 1989:2).

Capital Markets

The research of Hardin's critics has demonstrated that any property modality can lead to environmental deterioration, contrary to Hardin's argument that private ownership or state ownership can prevent this (e.g. Bromley 1989). But what is missing in the arguments is the function of capital markets in

destablizing fairly closed systems of resource use (see Johannes 1977). External capital markets encourage an individual who holds both parallel and stratified rights with others to overexploit the resource for his own benefit, either for buying new capital goods and consumables or by converting his profit into investments in the external capital markets. This permits him then to move away from his community, thereby avoiding the negative feedback that in the past would have kept his use of the sustainable resource under control. And this also functions with private property. Local capital markets and land encourage a private property owner to exhaust his resource if he can get a better return from investing his benefit stream either in the capital market (e.g. Fife 1971) or in the purchase of a more profitable future resource such as education for his children.

Conclusions

Hardin's claim has been embraced as a sacred text by scholars and professionals in the practice of

designing futures for others and imposing their own economic and environmental rationality on other social systems of which they have incomplete understanding and knowledge. They have written off contrary evidence and the costs of disorganization from imposing such changes on local populations. Furthermore, they have been blinded by their own ideology of liberal individualism so that they have ignored the various property modalities in Anglo-American law by which private property is owned, used, and managed by multiple individuals as in partnerships, corporations, trusts, tenancy in common, joint tenancy. Instead they have focused only on individually held private property.

Hardin's critics have demonstrated that this sacred text is wrong. They have provided case studies in which a resource with multiple users does not result in overexploitation of the resource or environmental degradation. And they have provided evidence that neither private property nor state ownership is the vaccine against overexploitation and environmental

degradation nor always the most efficient in utilizing resources (e.g. MaCay and Acheson 1987).

They have also shown how the breakdown of sustainable resource exploitation by multiple users is caused by the intrusion from governments outside the local socioeconomic system, resulting in the "dissolution of local-level institutional arrangements whose very purpose was to give rise to resource use patterns that were sustainable" (Bromley and Cernea 1989:7; Sharp and Bromley 1991). However, the critics have not fully developed the importance of access to growing capital and commodity markets external to the local socioeconomic system as contributing to the breakdown of local rules of exploitation and environmental degradation.

The most important contribution of Hardin's critics, however, has been to shift the focus of the arguments from an elitist, neocolonialist dialogue based on an externally imposed rationality to research on the internal rationality of indigenous property systems in order to understand how they are adaptive.

They have thus made the point that local property arrangements have an important place to play in development. Given the fact that Western economies have not had outstanding success in managing resources for sustainability and preventing environmental degradation, we might learn some useful techniques from the study of how this is done in indigenous societies.

Unfortunately, neither Hardin nor his critics have developed a method for analyzing property rights that is adequate to the problem of determining what property modalities and their associated management regimes contribute to efficient and sustainable use without environmental degradation. The concepts of private property, common property, and state property are not precise enough to provide a definitive answer and they should be used with caution if not in fact discarded.

Certainly, it would be a mistake of grave oversimplification to class the system of property rights over village land in Borneo as common property or communal property.[5] And it would similarly distort

the actual ownership system of Rungus fruit trees to relegate them simply to a form of "common property."

However, the method of analysis presented here of determining the locus of rights and their nature, is only the first but certainly the most basic step to determining what property systems are efficient and sustainable. The organization of a property system provides the opportunities and limits on which the management organization for such resources can be built (Appell 1988b). But such an analysis does not provide an assessment of the efficiency and effectiveness of any form of administration of a resource, nor the actual operation of the internal jurality, or administrative law, of such property systems and what sanctions are operable to maintain an orderly use of the resource.

To return to the conceptual problems of common property, if the term common property is ill defined and hides local incidents of ownership, what alternatives are there? It is to be deplored that the term has reached such widespread usage, so that it may

not be possible now to break away from modes of thought that have historical roots in Western societies to a more universalistic approach. But its current usage causes much confusion in what it refers to, and it certainly does not identify any particular system of property relations. Its only common features are that it refers to multiple uses of a resource that is either not owned or owned by one or multiple jural entities. But this leaves in limbo the jural loci of these rights and glosses over the distinction between types of rights such as parallel, stratified, shared, and derived rights. It would have been much more useful if the International Association of Common Property had been termed the International Association of Common Resources, or Community Resources, leaving the actual nature of the property relations in each case to be determined.

NOTES

[1] I am indebted to comments and constructive help on an earlier draft of this paper to Dr. Robert C. Hunt and Amity A. Doolittle.

[2] Hardin's argument is also economically naive. It ignores the marginal costs of increasing one's use of the "commons," which puts some limits on such behavior (e.g. MaCay and Acheson 1987).

[3] McKean's (1986) historical study of common lands in three Japanese villages found no environmental degradation as a result of this form of ownership.

[4] This definition of a property relationship builds on the fundamental work of Hallowell (1943), which nevertheless was deficient in specifying the types of jural entities holding property rights and the nature of different interests in property.

[5] See Appell (n.d.) for a detailed criticism of how the use of common property concepts with respect to the Borneo village leads the analysis astray.

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