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PROPERTY RIGHTS THEORY AS A BASIS FOR ORGANIZING  
RESOURCE UTILIZATION FOR A SUSTAINABLE DEVELOPMENT

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by

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# **PROPERTY RIGHTS THEORY AS A BASIS FOR ORGANIZING RESOURCE UTILIZATION FOR A SUSTAINABLE DEVELOPMENT**

by

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## **Abstract**

The paper presents some central concepts from property rights theory: the game of chicken and the tragedy of the commons, the game of "holdout" in joint ventures, the role of transaction costs and externalities in judging macro consequences of the micro-organization of activities. These concepts are first introduced through a stylized example of the utilization of a common property resource. They are then discussed in a more theoretical perspective, before they are used to derive some conclusions about the role of the state in furthering development. It is suggested that the state, as a minimum, have to be able to provide 1) an initial minimum bundle of entitlements for each citizen, 2) security of investment, and 3) fairness of exchanges.

## FIRST DRAFT

# PROPERTY RIGHTS THEORY AS A BASIS FOR ORGANIZING RESOURCE UTILIZATION FOR A SUSTAINABLE DEVELOPMENT

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### **Introduction**

In a broad interpretation sustainable development may be taken to refer to the total societal resource base and its organization. The utilization of both renewable and depletable resources has to be accounted for in a perspective where the goal is that the provision of freedom and welfare for the members of the society has to be sustainable. The narrow interpretation is to look only at the development of a renewable resource<sup>i</sup>. The two interpretations of resource utilization for sustainable development are, however, not independent. The broader, being the more difficult task, presupposes that the problems set by the more narrow interpretation are solved. The problems of organizing resource utilization for a sustainable development will therefore be approached by looking into the problems of managing renewable resources.

In a discussion of the problems involved in the degradation of common property resources, Blaikie and Brookfield (1987, pp. 188-196) notes that the "tragedy of the commons" (Hardin 1968) is not an inevitable law, but that it is set in motion "because of the breakdown of particular institutions of land management" (p. 196). They also note that often the state is involved in this breakdown by trying to enforce new rules for utilizing the common property resource without consideration of the old rules. The interaction of old and new rules produce unintended consequences leading to an unsustainable utilization of the common property.

This raises the question of what role the state ought to have in regard of common property resources as well as how to perform this role<sup>ii</sup>.

Despite the differences of the liberal and Marxist interpretation of the role of the state in development, they both agree on its decisive importance.

The state seems to have a both omnipresent and self-evident position development. It is supposed to allocate economic resources, Marshall military protection, supply manpower training, and foster national pride to achieve the concerted effort needed to improve the life of its citizens. The proper conceptualization of the state, however, will not be an issue here, neither will development theory as such be discussed.

The present paper will suggest that the state will do well to consider how the various societal processes work: that the means of development may be just as important, sometimes more important, as the goal. This is intended in a more specific and precise manner than the common presumption of democracy, western style, as the best road to development. In particular it is suggested that regulations and controls of the various processes of the society aimed at decreasing transaction costs, maximizing external economies, and minimizing external diseconomies, a task which only can be done by a state, will increase the societal surplus in such a way that not only will both citizen and state be better off with such regulations and controls than without it, but they will also be better off with this kind of activity than with the ordinary direct allocative and organizing activities often pursued to further development. Process control generates state power.

A guide to this kind of state activity can be found in what have been called a property rights perspective on institutional development. Much of the transactions of a society can be viewed as involving negotiations about, explications of, transfers of, and enforcements of property rights. The rules for this kind of activity as well as the restrictions on how property rights can be defined and distributed are a significant part of the motivations and actions of every citizen and shape the aggregate outcome of their actions more powerfully than any kind of direct regulation of their activities.

In the present paper a property rights perspective on institutional development will be presented and used to discuss some of the problems involved in the management of land use.

### **Property rights and resource utilization: A stylized example**

Before we go on to present a property rights perspective on development, we shall present a stylized illustration of how variations in property rights institutions may affect resource utilization. The example is stylized because it assumes no population pressure, no history (or cultural practices) in the situation and no outside forces interested in the outcomes of the decisions of the participating actors.

### **The tragedy of the commons**

Suppose a clearly delimited tract of land is owned in common by two tribes of cattle owners. There is no one who can force either of them to limit the number of cattle. To do that both of them have to agree. From old on feuds and diseases have kept the number of cattle about constant. For both of them the herds have been fluctuating about 4000.

But times are changing. Development aid has eradicated diseases among both people and cattle. Now the traditional competition about which is to become the more powerful tribe can unfold. The tribes start to add cattle to their herds. The development expert looks on the process in despair and tells the tribes they have to reduce the number of cattle otherwise the cattle will starve and they will both be poorer. Now, the chief is not stupid. He can see the merit of reducing the number of cattle. But he also sees that if he reduces his herd the competitor can get away with a larger herd. If he reduces his herd and the competitor does not, he effectively concedes victory to the other. True, he will have more cattle than if he continue to contribute to the overexploitation. But the other chief will have many times more. What shall he do? Turn "chicken" and concede victory to avoid the catastrophe threatening both or go on adding cattle to his own herd hoping the other will turn "chicken"?

Most people in such situations will choose to go on adding cattle to their herds; either hoping the forecasts of ecological catastrophe are exaggerated or hoping it will take a long time. Sooner or later, however, the tragedy will be manifest. Cattle starve. Men starve. In the absence of restraints (war, disease, cultural practices), "freedom in a commons brings ruin to all" (Hardin 1968).

Table 1      The tragedy of the commons.

Payoff matrix in a game of "chicken".

		CATTLE TRIBE B	
		MORE CATTLE	LESS CATTLE
CATTLE TRIBE A	MORE	1	2
	LESS	2	4

The sensible thing to do is, of course, to do something else entirely. The two tribes should come together to negotiate an administration of the tract of land which can determine how many cattle each tribe can have and with power enough to enforce the agreement. But these activities are not costless.

**Transaction costs**

The costs connected with the negotiating of an agreement and the policing of its execution are called transaction costs. In particular the monitoring and policing costs may be high in long term agreements on resource management. It is a point to try to minimize these.

The point of a new institution is, however, to induce the cattle owners to stop adding cattle to their herds. This can be done by direct regulation of the number. This requires however comparable controls: counts of the herds. If the herds mingle, they have to be separated first. But there is also an indirect approach to such regulation. The reason for continued growth of the herds is basically that he who adds to his herd can reap the benefit of the added cattle while he does not have to pay the full price in terms of the resources used. The price is shared by the other tribe.

### **External (dis)economies**

"An externality is present whenever some individual's (say A's) utility or production relationships include real (that is, nonmonetary) variables, whose values are chosen by others (persons, corporations, governments) without particular attention to the effects on A's welfare." (Baumol and Oates 1988, p. 17).

The chief who decides to add cattle to his herd affects negatively the grazing possibilities of the other tribe as well as his own. The action represents an external diseconomy for the other tribe.

An alternative to direct regulation of the number of cattle is to concentrate on "internalizing" the externality. If there is any way of securing that the cost of adding cattle to the herd will affect only the tribe which adds the cattle, one might hope that they, in enlightened self-interest, would choose to limit the number of cattle without needing the apparatus involved in direct regulation.

For the case discussed above introduction of boundaries would be one such solution. If both land and water and any other valuable resource in the area can be equitably divided by a boundary, a fence maintained by the two tribes would seem to provide the lowest transaction costs providing the incentives for an ecologically sound resource management.

### **Complications: the free rider and the game of holdout**

Two tribes in a clearly delimited area is of course the simplest possible situation one can imagine. In any real life situations there will be more actors involved and the area will not be very precisely delimited.

If an area is truly common property for those who use it, any kind of institutional change will require unanimous support of the involved actors. In this situation one often will find some actor more or less openly playing the game of holdout. The more profitable the institutional change is seen to be, the more likely it is that someone will find it to their advantage to play difficult to secure an advantage to themselves. The one holding out on the agreement to execute the change will, by being

difficult, often be able to secure for himself a larger than fair share of the profit of the change, and at least put the venture in jeopardy of not being executed.

If one of the advantages of the holdout is to be exempted partly or wholly from the costs involved in the institutional change, he is also a free rider. Free-riding can however also occur in situations without institutional change. If some actor is able to avoid paying or contributing to the activities necessary to keep up an institutional structure, the actor is called a free rider and the contributions of all others wanting to maintain the institution must be increased.

If for example a village has been keeping the grazing land as common property, with direct regulations of the number of cattle for each member of the society and a police force to monitor the compliance to the regulations. For various reasons many of the villagers have fallen on hard times and the village council votes to exempt them from paying their taxes. The taxes for the rest increase, of course. Somehow times does not improve, or the image of reality in the council deciding on the issue is that continued tax exemptions are necessary to further the industrial development of the village. Even more people are exempted from taxes and the few who still pay, begin to calculate what they gain by cooperating. Those who cooperate by paying the transaction costs of the institutional regulations find that the cost of providing for the free riders now exceed the gain of the regulations. If they turn egoists they may still take out some profit before the system collapses and leaves everyone poorer. In any case, they have less left now than they will have if everyone turns egoists.

The tragedy lies in the fact that they have only a third of what they would if all were cooperating to pay the transaction costs.

Table 2     The tragedy of the commons.  
Payoff matrix in a game where free riding have turned the game of "chicken" into the game of "prisoner".

### **TYPE B INDIVIDUALS**

	<b>EGOISTS</b>	
<b>COOPERATIVISTS</b>		
	<b>EGOISTS</b>	0.9
<b>TYPE A INDIV- IDUALS</b>	1	6
	6	3
<b>COOPERA- TIVISTS</b>	0.9	3

**Preliminary discussion**

The preceding brief and stylized discussion suggests two important conclusions:

- 1) The introduction of properly defined property rights, in particular private property rights, can encourage ecologically sustainable resource management.
- 2) It is necessary to consider carefully how the costs of maintaining an institutional arrangement are distributed.

However, ecologically sustainable resource management does not follow automatically from the introduction of private property rights. In particular, the interests of the owners of property have to be long-term. This raises the question of how to assure the "owners" that it is in their interest to take the long-term view. One way to do it might be to convince people that if they exploit the resources for a maximum short term gain, they have to suffer the consequences. The penalty of not taking the long-term view must be starvation or, at the very least, loss of property.

But if society is unwilling to contemplate consequences like starvation and poverty, if the state on humanitarian grounds finds that it must bail out those coming to suffer the consequences of unsustainable resource management, then the ecological argument for the private property rights disappear and direct intervention should have been preferred even though the transaction costs are considerably higher.

Direct regulation of resources has, however, their own peril, also in a democracy. Direct regulation in a democratic decision making system has so far not shown much ability pursuing a consistent long-term policy. The hazard of buying votes and short term peace from the various interest groups, is always threatening to develop into something similar to the situation described above, where an increasing number of loyal supporters begin to question the equity of the system and their own interest in contributing to it.

The preliminary discussion has introduced property rights as one institutional variable affecting the resource utilization. It has also pointed out that welfare considerations should enter into the definition of the property rights. Before we continue the discussion of the problems of achieving a sustainable development we must look closer at what is meant by a property rights system.

### **A property right is a relation**

A property rights system can, short and imprecise, be defined as an institution determining who shall get which benefits from which resources. According to Godelier (1984) "the concept of property may be applied to any tangible or intangible reality", and rules of property rights will "always assume the form of normative rules, prescribing certain forms of conduct and proscribing others under pain of repression and sanctions" ( p. 76). But he also warns that "Property only really exists when it is rendered effective in and through a process of concrete appropriation." (p. 81).

To say that property rights define who is going to get which benefits from which resources, does not say very much.

The nature of property rights have been spelled out by Hohfeld (1913, 1917). A property right does not in itself so much concern the "something" giving benefit as it concerns the "who". A property right can be said to define a relation between an owner and all non-owners in regard of "something".

Relations are dual in nature since they can be experienced from two perspectives. By the nature of the problem, to regulate the streams of benefits from human activities, a property relation has to be an

asymmetrical relation. This was noted by Hohfeld who found that property rights recognized by law had a dual nature. He classified the various legally recognized property relations to fall into four pairs:

Table 3 Aspects of a property relation

	<u>IF OWNERS HAVE</u>	<u>NONOWNERS HAVE</u>
Use aspects	1. rights	duties
	2. privileges	no rights
Exchange aspects	3. powers	liabilites
	4. immunities	no powers

A right is an expectation about the behaviour of the non-owners, this expectation appears to the non-owners as duties towards the owner. The privileges of the owner concern which behaviour the owner is allowed without having to consider the reactions of the non-owners. Correspondingly the non-owners have no rights (expectations about the behaviour of the owner) which can interfere with the behaviour of the owner.

The powers of the owner are the abilities to voluntarily create new legal relations with a non-owner. If an owner exercises his power to create a new legal relation with a non-owner, this new relation creates a liability for the non-owner. On the other hand, an owner has immunities against attempts from non-owners to create new legal relations. The non-owners have no powers to create new legal relations.

To this must be added that the focus of the property relation in any case is some particular benefit from some source. The expected and allowed behaviours concern this "something". The same does the possible new legal relations. It is important to note that for a relation to be a property relation, it must be enforceable. The rights, privileges, powers and immunities of the owners are one way or another protected. Those violating them do so at a real risk of suffering sanctions.

If this kind of classification is applied to the utilization of a common property resource as discussed above, the following property relations are implied:

Table 4 The property relations of a common property resource.

	<u>OWNERS</u>	<u>NONOWNERS</u>
<u>Use aspects</u>	<u>rights</u> equal rights of access to the resource	<u>duties</u> not to access the resource or interfere in the access of the owners
	<u>privilege</u> to appropriate any benefit of of having access to the resource	<u>no rights</u> to benefits from the resource
<u>Exchange aspects</u>	<u>powers</u> equal say in deciding who shall get access to the resource at which price	<u>liability</u> have to accept the decision of the owners on getting access to the resource
	<u>immunities</u> nonowners have no say in deciding who shall have access or what the price shall be	<u>no powers</u> to decide on access or set a price

From this description, it is seen that the rights and privileges of the owners invites to a process resembling the game of chicken. To escape this the powers of the owners must be extended to include decisions on the extent to which owners can appropriate benefits from the property. A "government" of the common property is needed.

We also see that the powers of the owners invites to the game of holdout if a decision of admitting some new owner or, in general, a change of current uses, is pending. To escape this the powers of the owners must be diminished to exclude the veto-power of one individual or a minority of owners. Again, a "government" would seem to be in order.

But once a government is installed it costs has to be covered and its powers checked. Where the number of owners are few, it seldom is a problem. But in many countries all or a large part of the land is in

principle a "common" or in state ownership. For the various types of owners, the problems of utilization of the resources are not equal.

### **Types of owners**

For a particular stream of "benefits" from a "something", four types of ownership have been identified (adapted from Bromley 1989, p. 205):

#### 1. Private ownership.

One particular individual is vested with the rights, privileges, powers and immunities pertaining to the possible "benefits" from a "something". These rights, privileges, powers and immunities of the owner have corresponding duties, no rights, liabilities and no powers for all others with regard to the "benefits" of this "something".

2. State ownership. One particular agency empowered to act on behalf of the state is vested with the same rights, privileges, powers and immunities as if it were a private owner. But being a "system responsible actor" a state will have to justify its property by particular rules applied in addition to the ordinary rules to justify and legitimize its property. One particular important modification involves rules of access: who can be excluded from enjoying at least some benefit from the state property<sup>iii</sup>.

#### 3. Common ownership.

One particular group of individuals are co-owners. The rights, privileges, powers and immunities pertaining to the benefits belong to the group collectively. Those not member of the group is excluded from the benefits, those who are members of the group cannot be excluded<sup>iv</sup>.

#### 4. No ownership<sup>v</sup>.

Nobody is vested with the rights, privileges, powers and immunities of an owner. This means that any benefits of the "something" are open for appropriation for anyone willing and able.

### **Problems connected with type of ownership**

The problems noted for a resource utilized through common ownership are in reality less than indicated, in so far as the decision rules used are a result of a historical process and the traditional society is not affected by

major new outside forces. They are less either because the balance of forces (like traditional feuds and diseases) keeps the inherent unstabilizing societal practices in check or because traditional patterns of cooperation have been shaped to institutions circumventing the inherent irrationalities.

However, this does not hold for the true "no ownership" situations, which seem to crop up in connection with the utilization of resources with no history in the society. In cases with no ownership, the problems identified in the stylized discussion of the common property resource are relevant and intensified because of the illegality of exclusion of any actor (or citizen).

While private ownership and state ownership escape the problems noted for common ownership and no ownership, they are not without problems relating to sustainable utilization of resources. The problems of common ownership and no ownership can be said to be connected to the balancing of rate of use in relation to rate of renewal. If we can assume that private ownership implies a prohibitive penalty for not balancing the rate of use to the rate of renewal, the problems of private and state ownership can be said to be connected to unintended consequences (external diseconomies) from the use of the resource<sup>vi</sup>. The problems of these unintended consequences are twofold. First they are connected with the costs of establishing extent and origin of the consequences. Next they are connected to the problems of those actors who play the game of hold-out in the negotiations to find ways and means of containing the unintended consequences. Both problems would seem to call for a control agent in relation to the various private owners<sup>vii</sup>.

### **Perspectives on property rights in institutional change**

The works of particularly Coase (1937, 1960), Demsetz (1967), Posner (1972), and North (North and Thomas 1973, 1977) have been associated with the emergence of a property rights perspective on institutional development (Bromley 1989, p. 12)<sup>viii</sup>.

Property rights concerns the practices, rules and beliefs which determine who will get which benefits from which resources. Property rights "help man form those expectations which he can reasonably hold in his

dealings with others" (Demsetz 1967, p.347). This means that property rights are a central part of human interaction. Even in situations where the actual ongoing interactions have nothing to do with the distribution of benefits, one can see that the prevailing property rights affect the framework of interaction at least by defining and infusing the spacetime setting of the interaction with particular meanings.

This view of property rights means that they are a central part of all social institutions and that institutional change means changes in property rights<sup>six</sup>.

The perspectives on property rights presented here have been developed to assess the utility of any particular property rights system in a more comprehensive societal perspective.

In economics evaluations of institutional change has focused on property rights by two approaches:

- 1) The transaction cost perspective on property rights points out that property rights are not costless to define, agree upon, enact, and enforce, and
- 2) The externalities perspective on property rights points out that social change, e.g. technological change or changes in availability of resources, will initiate activities entailing changes in property rights.

- 1) The transaction cost perspective.

Since property rights are about the distribution of benefits, the potential for conflict is great and the energy available for fighting over the distribution of the benefits is correspondingly large. The effort going into the definition and enforcing of any particular system of property rights can be seen as a cost to the society. The effort might have gone into producing and enjoying more benefits. In general, it seems obvious that the less resources spent on the definition and enforcement of property rights the more goods the members of the society enjoy.

One implication of this is that more effort will be spent on defining the property rights of those resources found most scarce and/or most valuable. Resources where there is enough for everyone will be open to everyone.

One should, however, temper this transaction cost perspective on the distributional struggle by noting that any institutionalized activity generates some benefits even the losers of fights over distributions generate some benefits for themselves. In some cultures fights or feuds over resources can approach a way of life.

## 2) The externalities perspective.

Social change implies among other things new behaviour. New ways of doing old tasks as well as new tasks emerge with new knowledge and changing needs and tastes. New behaviour also means changes in the nature and distribution of the unintended consequences flowing from the activities. These unintended consequences represent costs and benefits to actors not part (either directly or tacitly) of the activities. If the costs or benefits become large enough, questions of property rights to them arise. Demsetz maintains that "the emergence of new property rights takes place in response to desires of the interacting persons for adjustment to new benefit-cost possibilities." (Demsetz 1967, p. 350).

The changes in property rights are supposed to be in the direction of internalization of the external (dis)economies. Demsetz suppose that this happens "when the gains of internalization become larger than the cost of internalization" ( Demsetz 1980, p.350).

This may well be true as a general tendency. But in any specific circumstance it may not be equally true for both the external benefits and the external costs. This follows from two additional points one have to include in the perspective: 3) The distributional justice perspective on property rights which asserts that the members of a society have preferences concerning the shape of the distribution of goods and bads as well as for the goods and bads themselves, and 4) The social power perspective on property rights which reminds us that in so far we are looking for outcomes, interests in redefining property rights are always weighted by the power of the antagonists.

These two perspectives on property rights have not been systematically included by economists so far<sup>x</sup>. To bring this into the debate we have to go to philosophy, sociology and political science.

### 3) The distributional justice perspective.

The distributional justice perspective on property rights reminds us that value judgements are intrinsically a part of the process of changing institutions. People do care about the distributions of goods and bads and they elaborate justifications for the way things are or for the way things ought to become. The cultural process of legitimizing a particular system of property rights will affect the "transaction costs", the costs of agreeing upon and enforcing the property rights (e.g. the enactment of laws, the police and the court system). In so far as cultural norms and values underpin a property rights system the cost of enforcing laws will be less than in a system with a high level of disputes about the property rights.

In the cultural process elaborating justifications for the distribution of property rights concerns about fairness and desert is as prominent as concerns about utility and effectiveness.

### 4) The social power perspective.

In any particular circumstance where costs and benefits and their distribution are considered, it matters who bears the costs and who reaps the benefits. The social power of the different interested groups affects the way property rights will be redefined if they change at all. Five types of power (Berge 1989) will be relevant to consider: I. Power based on the control of resources: 1) Physical power, 2) Economic power, 3) Ideological power, and 4) Knowledge power, and II. Power based on the control of processes: 5) State power<sup>xi</sup>.

In our societies these various kinds of power are organized and brought into two arenas: the markets, where streams of benefits are exchanged, and the political field where control of the state and some of the rules governing the market exchanges are determined.

## **Property rights and sustainable development**

If we apply the perspectives on property rights as outlined above to the problems of sustainable resource development, the transaction costs and externality considerations may lead to some kind of regulated private property rights system as the solution. Taking further into account the distributional justice perspective, one sees that this will hardly work

unless all relevant actors of the society have an initial endowment of property giving them a minimum capability of long term planning of their lives.

In real life the distribution of power and de facto property rights are often very skewed. In particular there are in many societies a substantial and often growing population without property except their own labour power.

If a property rights system is designed presupposing that all actors have an initial minimum endowment of resources, the introduction of this system in a population without this initial endowment will not do much to improve the prospects.

Even if one were able to disregard the humanitarian considerations and wanted to write off the "surplus population", it would be likely that the policing costs, the costs of protecting the rights of the owners against the non-owners would be prohibitively high.

Without the will to distribute the initial endowment of property rights, the introduction of a property rights system designed to circumvent the irrationalities inherent in current utilization processes will do no good.

If a society is able to endow each citizen with a minimum initial bundle of resources, then the state should, at a minimum, make an effort to secure the fairness and validity of the transactions which the citizens enter into, rather than worry about any particular outcome of the actions. This is in any case important both to its authority and to the legitimation of the system, but it may also be a part of the motivation for a sustainable development.

Unsustainable utilization of a resource should be penalized with a minimum of costs. Overexploitation will carry its own penalty, pollution as well. But, in addition, pollution usually affects neighbours. Giving the neighbours legal remedies not only to stop polluting activities, but to appropriate the possible gain the polluter has had from the activity might prove effective.

To encourage the long term view which the sustainable use of a resource requires, the state also should make an effort to guaranty the long term validity of a property relation. If loss of property is an everyday and frequent experience, no rational actor will take a long term view on investment and use of resources.

## Notes:

<sup>i</sup> A renewable resource may be renewable either because of growth (regeneration of plant and animal populations) or because of self-cleaning processes (dissipation of waste, both toxic and nontoxic).

<sup>ii</sup> The executive director of the United Nations Centre for Human Settlements said at the international meeting on "Cities, the mainspring of development in developing countries.": "Clearly changes in policy direction are called for, and some of them may involve radical departures from existing practice. Such a change in direction must have as its point of departure that the solution does not lie in the direction of greater public spending or more direct government involvement. Rather government should concentrate on supportive and facilitating actions." (Ramachandran 1989).

<sup>iii</sup> In concepts introduced earlier one might compare state property to impure private goods or positional goods.

<sup>iv</sup> Again one may compare this to the concept of an impure public good or a club good.

<sup>v</sup> The distinction between no ownership and common ownership is important. The logic of the utilization of a "common property resource" (Gordon 1954) applies in reality to the resource with no ownership, the open access resource. For a true common property resource the logic will apply only under particularly specified circumstances. Needless to say, the open access resource is a vanishing specie.

<sup>vi</sup> Of course, these also occur for common ownership and no ownership, but since the areas involved here usually are more extensive, the unintended consequences often are internal to the group of owners. They belong among the costs of exploiting the resource. If the problem of balancing the resource utilization against the rate of renewal is solve, there also will be forum for discussion of the unintended consequences of the utilization.

<sup>vii</sup> The problem of state ownership is not particularly different from private ownership in a society where private ownership is the mode, and very similar to the problems of common ownership in a society where that is the mode. What may cause problems is for the state to apply the same kind of regulations and controls to itself as owner as to private owners.

<sup>viii</sup> It should be added that Bromley himself adds significantly to this tradition.

<sup>ix</sup> Eisenstadt (1968) defines social institutions as "regulative principles which organize most of the activities of individuals in a society into definitive organizational patterns from the point of view of some of the perennial, basic problems of any society or ordered social life" (p.410). Bromley, thinking of economic institutions, finds that they may be defined as the sum of "consensual arrangements or agreed upon patterns of behavior that comprise conventions", and the "rules and entitlements that define with both clarity and obvious sanction individual and group choice sets." (Bromley 1989, pp. 77-78).

According to Lewis (1986, p.58): "A regularity R in the behaviour of a population P when they are agents in a recurrent situation S is a convention if and only if it is true that, and it is common knowledge in P that, in any instance of S among members of P: (1) everyone conforms to R; (2) everyone expects everyone else to conform to R; (3) everyone prefers to conform to R on condition that others do, since S is a coordination problem and uniform conformity to R is a coordination equilibrium in S."

<sup>x</sup> But Bromley (1989) begins to assess their significance when he notes that new costs and/or benefits as the cause of changes in property rights "tells little if anything about the progression of property arrangements, nor does it address the obvious question of the suitability of the property institutions prior to change" (p. 217), and "In summary, property arrangements change in response to both market and extra market pressures. The market pressures come by way of price changes, supply difficulties, and the expression of new tastes and preferences on the part of consumers. The extra-market pressures come by way of demands brought in the political arena in response to new tastes and preferences, new relative prices, and supply problems. The mix between market and extra-market will depend on costs and potential gains available from each route."(p. 219). Also the work of Sen (1984) on the entitlement approach to development is notable here. "Entitlements refer to the bundle of commodities over any of which a person can establish command, by using the rules of acquirement that govern his circumstances" (p. 30). Obviously, entitlements are the individual side of a particular property rights system.

<sup>xi</sup> State power as different from control of resources and emanating from processes, can be defined in relation to the development and enforcement of rules governing social process so that 1) economies of scale are maximized, 2) diseconomies of scale are minimized, and 3) the unintended consequences flowing from processes and interactions of various processes give rise to benefits rather than costs (Berge 1989, pp. 39-45).

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