

## **“Reinventing the commons”: New metaphor or new methodology?\***

*(Draft only)*

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### *Abstract:*

Since the mid-1980s there has been a rapid growth in studies concerned with common property management. It is argued that despite a hectic research activity, there is a tendency to refine and reuse familiar, and well-worn arguments instead of questioning them. To move ahead, the study of common property regimes must proceed beyond rebutting or rephrasing Hardin's "tragedy of the commons" parable. Instead of a further refinement along existing lines of scholarship, we need to ask ourselves what the object of study is? More than a conceptual confusion, "common property" as an object of study is blurred: is it (a) primarily a behavioural relation between men; (b) a question of agents and choice which can be solved through balancing incentives; (c) a problem of markets and a question of "getting the prices right"; or is it, finally, (d) a question of institutions and how institutions structure human action? It is argued that there is a need for "rethinking the commons", and to recast old questions, reformulate research designs and add to this novel empirical studies which so far have been left out in our effort at theory building. Especially there is a need for a clearer analytical precision in the use of the terms "institution" and "institutional" as well as theories of institutional change. Moreover, key-concepts such as "traditional", "customary" and "communal" which are often used in conjunction with the commons, should be scrutinized and critically reflected upon and not embraced without questioning.

\* This paper builds on a recently completed review of the commons debate, see Are J. Knudsen. *Living with the Commons*. Bergen: The Chr Michelsen Institute, Report 1995:2.

# Part I

## Preamble

It has been claimed that “God has chosen to give the easy problems to the physicists” (Lave and March, in Barnes 1990:218). The difficult ones, we can infer, were left to the social scientists. This may be one of the reasons why we have been better at engaging in what Eric Wolf (1990:588) has termed “a project in intellectual deforestation”, than in conjuring up new ideas, models or theories. In the modern history of social science, few theories have taken such a beating as Garrett Hardin’s (1968) article “The Tragedy of the Commons”. The reason is that Hardin was completely wrong, right? Wrong.

Given the assumptions of Hardin’s argument<sup>1</sup>, he was, I would argue, right: unrestrained pastoralists will attempt to free ride to the detriment of other herdsman sharing the same pasture. For all practical purposes, Hardin’s theory can be equated with the seminal article of H. Scott Gordon (1954), who lay the foundation of “common property theory”: given the assumptions imagined by Gordon,<sup>2</sup> unrestrained (atomistic) fishermen will tend to overharvest a fish resource.

Another, and quite different point is whether “common property theory” is an adequate representation of the empirical reality which surrounds us. The work of Gordon (ibid.) has been severely criticised, especially by anthropologists who see his model refuted by a number of examples of successful local management of fisheries (McCay and Acheson 1987). This depends on the theory’s epistemological status: is it an empirical model or an analytical theory? I would agree with Brox (1992) that it is an analytical theory, and hence much of the critique of “common property theory” is misplaced. However – and here I disagree with Brox – if the hypotheses derived from the theory are disproved, then the theory’s utility for research is reduced. What matters is the accuracy of the predictions, not the theory’s founding axioms (cf. Angelsen 1993:13).

<sup>1</sup> Hardin claimed that given A (rational herdsmen), B (private herds) and C (finite resource base), then D (overstocking and subsequent overgrazing) would occur.

<sup>2</sup> Gordon’s model is premised on the following points: there are no limits to the number of new entrants (“open-access”), and fishing effort is only constrained by the threat of diminishing returns. The resource itself is neither protected by formal nor informal rules, in other words it is open for all potential users (open-access, *res nullius*).

It follows from this that to the degree we can point to empirical examples which do not fit the assumptions of “common property theory”, we need to build a new theory which does, and stop “flogging dead horses” (Brox *ibid.*:229). As far as I have been able to discern, nobody (in the field of common property regimes) have attempted to construct a theory with a comparable level of generality as “common property theory” (Gordon 1954; Hardin 1968), and it is here, I believe, that we have failed. We have failed to move from an *idiographic* understanding of singular events to a *nomothetic* explanation of classes of events or problems (Table 1). Instead of taking up this challenge we have continued to claim that Hardin (*ibid.*) was wrong and by implication, so was Gordon (*ibid.*).

Table 1  
Types of theory

Type of theory	Level of generality	Method	Aim
Nomothetic (analytical)	High	Deductive	Generate theory, explanation, ( <i>Erklären</i> )
Weberian <i>Idealtypus</i>	Intermediate	Inductive	Derive salient properties
Idiographic (empirical)	Low	Inductive	Case studies, understanding ( <i>Verstehen</i> )

Rebutting Hardin and the property rights paradigm have become a school of its own, which we could call the “revisionists” (McCay 1993). Though the “revisionists” by no means constitute a uniform group, they represent – on the grounds of their common research agenda – an alternative approach to research on common property regimes. As the term “revise” implies, this is an effort to amend Hardin’s thesis, not to replace it with an alternative theory. As Acheson (1989:375) puts it: “Because of the work of anthropologists, the theory of common-property resources needs to be extended and modified in several ways”. The thrust of the revisionist critique has been empirical, that is, to bring forward new evidence that rebuts Hardin’s thesis (Berkes 1989; Bromley 1992; McCay and Acheson 1987).

As already mentioned, a wish to revise Hardin’s thesis is more evident among this group than the intent to put forward an alternative theory or research program. It is indicative, perhaps, that instead of new theory, there has been an effort among researchers to present their results within a common framework, known as the “Oakerson framework” (Oakerson 1992). The strength of Oakerson’s framework is as a *heuristic tool*. Further, it allows for a case-by-case analysis and that it organizes features which are shared among different common property regimes. Its weakness is that to only to a limited degree does it contribute to theory; in particular it does not explain why property regimes remain unchanged over time, or why one property regime is replaced by another.

One reason why creating a theory has alluded us, can be due to what Clifford Geertz (1973:25) sees as an epistemological problem of separating empiry from theory without losing the finer points of the analysis. In Geertz's own words:

The major theoretical contributions not only lie in specific studies — that is true in almost any field — but they are very difficult to abstract from such studies... Theoretical formulation hover so low over the interpretations that govern them that they don't make much sense or hold much interest apart from them. This is so, not because they are *not general* (if they are *not general*, they are *not theoretical*) but because, stated independently of their applications, they seem either commonplace or vacant (Geertz 1973:25).

A way to solve this epistemological problem is to settle for mid-range theorizing, which tries to build an "ideal-model" which can serve as an heuristic tool (*Gedankenbild*) (see Brox 1990:230). An example of this is Elinor Ostrom's (1990) attempt to formulate properties (Weberian *Idealtypus*) of long enduring property regimes. This represents a theoretical middle ground between nomothetic and idiographic research (Brox 1991:77). However, as a reviewer of her book *Governing the Commons* has noted:

There is a curious lack of congruence between the material in early and late chapters, which may help explain why *no particular compelling theory* of collective CPR [common property resources] institutions emerges from these pages (Field 1992:356, italics added).

This means that whereas Ostrom's aim is less ambitious than constructing a new theory, the reviewer faults her for not doing exactly this. Skipping the problem of theory, researchers have instead turned to the extensive use of metaphor.

### **The surfeit of metaphor**

The use of metaphor is indispensable in the social sciences (Barnes 1990), but in the field of common property regimes, I feel that the profusion of metaphor has pointed our attention in the wrong direction. If Hardin, as many claim, was wrong, it seems that Claude Lèvi-Strauss (1966) was right: Man constructs meaning through the use of metaphor (*bricolage*): Hardin's work has been described as a "paradigm", "parable", "theory", "hypothesis", "law", "model", "thesis", "tale" and "heuristic fable" to name but a few of those I have encountered. As I see it, the problem with research on common property regimes has been a *surfeit* of metaphor and a *shortage* of original contributions which could move the study of common property regimes beyond a critique of Hardin (1968.). Much of the so-called "new" research on common property management tend to repeat criticism which has long been absorbed by the research community (cf. Lees 1993).

Instead of attempts to create new theory, we have been content with clever phrasing; the “Tragedy of the Commons” has been replaced by the “Comedy of the Commons” (Rose 1986) and the “Tragedy of the Commoners” (McCay 1987). Does the most recent addition, “Reinventing the Commons”, herald a new methodological or theoretical approach, or is it simply a call to disseminate the “success of the commons” paradigm? If the latter is the case, I think we are doing ourselves a disservice. This is what a reviewer of D. Bromley’s edited volume *Making the Commons Work* (1992), calls the insistence on the *intrinsic value* of common property regimes:

it is a little surprising to read attacks...on positions which claim that common property *inevitably* leads to resource mismanagement and ecological disaster — that is, it is surprising that anyone today would hold such a position, and that anyone would find it worth the time to refute it. ...On the other hand, the occasional insistence on the intrinsic value of common property to people and their communities in this collection sounds somewhat romantic and often unnecessarily defensive (Lees 1993:106, italics in original).

To forestall the conclusion of this paper, let me say that “Reinventing the Commons” is long overdue. Not only must we become more critical of the concept “commons” itself, we must become more aware of the contested and ideological functions the “commons” can have at the grassroots level. Finally, instead of claiming an *a priori* intrinsic value of common property regimes, we must show why and how it is meaningful or important to people on a practical or symbolic level.

### **Framing and stereotyping**

It is common knowledge that the way we perceive and understand objects, events and arguments depend on how we frame them (cf. Bateson 1972:189). Similarly, I would argue, what we learn from case studies depend on the context of the inquiry. Depending on how the inquiry is structured, what some interpret at as successes, others see as failures. I would argue that the framing of a number of case studies as successes (McKean 1992), has blurred the finer points to be learnt from them.

Instead of serious attention to a number of new empirical case studies (we will return to them later) which tend to question or challenge established, or conventional knowledge, there is a tendency to continue to rely on a small number of case studies, all of which are used to rebut the notion of a “tragedy of the commons”. In particular I have in mind here Robert Netting’s (1981) excellent study of a Swiss mountain community, Fikret Berkes (1986, 1992) examination of Turkish fishery cooperatives and finally James M. Acheson’s (1988) wonderfully detailed study of Maine lobstermen. The problem is not these studies in themselves — they are all first rate work — but that they are used as *metonymic*

(part-for-whole) representations of a whole class of diverse common property situations. My first objection is therefore that we must take a much larger number of case studies into consideration before claiming the “success of the commons”.

Secondly, in the eagerness to underpin the “revisionist” (McCay 1993) agenda, there is a tendency to distort the finer points of Netting, Berkes and Acheson’s message; they become stereotyped as successes, whereas their authors’ conclusions are much more nuanced. To give an example: why do so few authors mention (either explicitly or implicitly) — as Acheson himself does — that the lobster fishery finally collapsed because the fishermen were unable to control the fishery through informal means themselves? This is very important, especially since Acheson’s study is one of the most widely cited examples of how informal regulations can prevent overharvest, even, as in this case, among commercial fishermen.

I believe that it is important to “cast our nets more widely”, that is, to try to consult the number of new cases studies currently available and include them in our efforts of theory building. I believe that only by doing so, can we do justice to the complexity of the subject matter. In the second part of this paper, I will focus attention on some case studies which, to me at least, have the quality that they challenge some of our stereotypes of the properties which are commonly attributed to common property regimes. To give a brief overview, I discuss them under the sub-headings:

- Institutions: The need for a definition
- Institutional change: Neoinstitutional economics
- The problem of authenticity: Traditional, customary or communal?
- Hierarchy and common property
- The importance of tradition
- Native ecological knowledge: Fact of fiction
- Informal regulations (in fisheries):
- The problem of innovation
- Local control with resource management

## PART II

### Defining institutions

Social scientists working on common property management are quick to fix the label “institution” on any condition regulating resource use, but are characteristically vague about how to define the term. Before discussing the role institutions play or should play, we need to clarify what an institution is. There are, broadly speaking, two ways of viewing institutions among social scientists. The first is the “bottom up view” which sees institutions first of all as the outcome, the aggregate of individual action (Ostrom 1986). Here institutional change results from actors changing preferences or changing constraints (opportunity set), what we could term a “voluntaristic” view of institutional change (Askvik 1993:152). The other approach takes a normative perspective, arguing that institutions shape peoples action and preferences. In this view, changing preferences come about as a result of institutional change, what we could term the “deterministic” position (ibid.).

In a review of the study of institutions, Askvik (ibid.) points to the fact that the term institution refers both to a micro and a macro phenomenon. From the micro perspective institutions are often identified simply as organizations, whereas the macro perspective reserves the term for entities such as “the state” or “the economy” (ibid.:151). Both these strands in the study of institutions would agree that to qualify as an institution requires a degree of permanence as well as independence of the personnel attached to or organized by it. As Askvik points out, an institution may or may not be an organization (and vice versa). North (1990:5) wants to keep the two distinct from each other, and argues that institutions represent – to use a sports analogy – the rules of the game, whereas organizations represent a set of players, a team, working within the framework of these rules towards specific objectives.

This duality in the study of institutions is expressed by Ridell (1982:56) who distinguishes between institutions understood as a normative concept within the social structure, from the more dynamic meaning of institutions referring to the ability of people to assert their collective will to reach some goal vis-à-vis each other and the environment. Similarly, Ostrom (1986:3-4) lists two standard definitions of institutions as either “rules about behaviour, especially about making decisions” or “equivalent to the term ‘political structure’”. In the same vein as

Ostrom, Runge (1984a:807) defines institutions “as a public system of rules that specify certain forms of action as permissible, others as forbidden, and provide for certain penalties and defenses when violations occur”. In her book, *How Institutions Think*, Mary Douglas (1986:46) defines institutions simply as “a convention”. In contrast to the minimalist definition offered by Douglas, a more comprehensive definition of institutions is given by North:

Institutions are the humanly devised constraints that structure political, economic and social interaction. They consist of both informal constraints (sanctions, taboos, customs, tradition, and codes of conduct), and formal rules (constitutions, laws, property rights) (North 1991:97).

This brings us to the second question: why are institutions needed? One of the simplest answers to this question is provided by North (1991:97) who argues that: “Throughout history, institutions have been devised by human beings to create order and reduce uncertainty in exchange”. More specifically, North argues that effective institutions lower transactions costs hence reduce the risk of defection and enable cooperative solutions (*ibid.*).

To answer the counter-question of why do institutions not evolve, North adopts an explicitly evolutionist perspective (1991:102). In a tribal economy there are strong moral constraints to innovative behaviour and constant struggles for power. This serves to constrain the development of institutions that otherwise could have facilitated trade. At the next level, North discusses bazaar economies in North Africa and the Middle East, which even if they represent a step up the ladder, are still constrained by a lack of uniform price and weight agreements. A third, and further refinement was the caravan trade which moved commodities and cash over long distances, but still was unable to institute formal rules securing the trade and instead had to rely on negotiating informal and temporary agreements based on trust and honour (*ibid.*:105).

According to North, modern states represent the highest level of institutional complexity. To explain “the interrelationship between the state, property rights, and productivity” (Eggertsson 1990:319), North adopts the terms “technical production frontier” and “structural production frontier”. Broadly speaking, the highest level of productive specialization in a society is the technical production frontier, whereas the most effective way of organizing production, including property rights, defines its structural production frontier. Maximum output is secured by bringing these two frontiers as close to each other as possible. North argues that historical evidence shows that states have been unable to accomplish this, which has limited the potential economic output. (For a critique of this view, see Field 1981).

Many social scientists seem to take institutions for granted, thereby avoiding the question of why they exist in the first place. North has proposed that:



The major role of institutions in a society is to reduce uncertainty by establishing a stable (but not necessarily efficient) structure to human interaction. ... Institutional change is a complicated process because the changes at the margin can be a consequence of changes in rules, in informal constraints and in kinds and effectiveness of enforcement (North 1990:6).

Central to North's argument is that effective institutions reduce transaction costs. Only in situations where there are perfect information and zero transaction costs, are there no need for institutions (North 1990:57). Institutions are, in North's view, first of all a means to enable economic transactions. This is, however, only one of many possible approaches to the study of institutions. The definitions of the term "institution" discussed above imply that the primary aim of an institution is economic (North 1991). For North, institutions are first of all vehicles which structure economic behaviour, and efficient institutions enhance economic transactions by lowering transaction costs. There is less to be learned from North's work about institutions whose function is not readily identifiable as "economic". This is problematic, because we know that small-scale communities lack the institutional specialization found in modern states (Weiner 1994:591). There is, for example, a wealth of literature on small-scale communities which demonstrate that institutions whose function is not primarily economic, may still have economic implications.

### *The institutional approach: Neoinstitutional economics*

Since Ciriacy-Wantrup and Bishop's (1975) seminal article, we have been aware of the importance of institutions (to structure human agency) for successful resource management, but we have not been able to come up with a comprehensive theory of institutional change.

The institutional approach to comparative economic analysis has its roots in the economic historian Karl Polanyi's classic work, *The Great Transformation* (1944). Though the work of Polanyi has faded from mainstream interest, it has been taken up again by North (1977) and Halperin (1984). Halperin claims that even though institutions were important to Polanyi's theories, he never attempted to define the term: "In all of his writing, Polanyi made clear that institutions were the key units of economic analysis, but he never provided an unambiguous, succinct definition of the term" (ibid.:250). There is a definite link between Polanyi's work and the questions of which concern us here: how do we explain the transition from non-market to market exchange, a shift which seems to be premised on a move from communal to private property regimes?

The most recent, and perhaps most ambitious, attempt to work out a theory of institutional change is found within neoinstitutional economics. Put simply, neoinstitutional economics use the traditional neoclassical method of rational individual actors to study institutions, and is concerned with how and why

property rights and institutions change. More specifically, neoinstitutional economics is concerned with a) how institutions affect individual choice, and b) how institutions change. The innovative part of the approach advocated by North (1990) and Eggertsson (1990) merges property rights theory with a consideration of transaction costs within a framework of institutions.

The foundations of neoinstitutional economics are the ordering or routinization of action (institutions), the costs of exchange (transaction costs), and human motivation and behaviour (rational choice). We have already discussed how North perceived institutions as essentially malleable and a result of human agency, as well as the links his work has to that of Karl Polanyi. Polanyi argued that there were three different "transactional modes": reciprocity, redistribution and market exchange. In his re-reading of Polanyi, North (1977) tries to salvage the neoclassical assumption of maximising behaviour, at the same time as he criticizes Polanyi for being unable to explain why one transactional mode was replaced by another. To understand this, North contends, we need to introduce transaction-costs analysis in combination with a theory of the state (ibid.:715).

Despite the fact that the term transaction costs is widely used, it is difficult to agree on a clear-cut definition of the term. North defines it simply as the "costs of defining and enforcing property rights" (1977:710). The term was originally developed by Ronald Coase in his ground-breaking work on "the firm". In his article, "The Nature of the Firm", Coase (1937:394) asked the deceptively simple question: given the benefits of large firms, why are there any market transactions outside firms at all: "Why is not all production carried out by one big firm?" The answer is, Coase argued, the additional costs of organising extra transactions which serve to limit the potential size and efficiency of firms (ibid.:396). Coase developed what came to be known as the "Coase theorem" in more detail later (1960) in order to discuss the scenario (implied in neoclassical economics) of a situation of zero transaction costs. If transaction costs were not included into the equation, Coase argued, the most efficient solution giving rise to the maximum income would predominate and that this would be independent of the initial distribution of property rights (North 1990:93). In a review of the property rights approach, Libecap (1986:228) argues that when transaction costs are high, the initial distribution of property rights becomes very important. Likewise, North argues that low or non-existent transaction costs are rare, and this explains why inefficient institutional arrangements persist (1990:93). In the same vein as North, Bromley (1989:181) argues that transaction costs are never zero, not the least when one considers that "transacting with future generations is infinitely costly".

The third important part of neoinstitutional economics is what motivates people's actions within institutions. In neoclassical economics, the behavioral assumptions rest on "rational choice theory". This analytical perspective takes as an *a priori* condition that actors maximize self-interest in a consistent manner. Though North obviously finds this too constricting, he is not clear on where his approach differs

from rational choice theory, except that it assumes that people do not always act in self-interest and may also be motivated by an element of altruism. To North, the purpose of institutions is to channel individual action by penalizing choices which have negative outcomes for the collective. North (ibid.) has stressed the role informal rules and constraints play in order to regulate behaviour, but even if North modifies the extreme “*homo economicus*” concept, he retains the basic features of rational choice theory.

### *Induced institutional innovation?*

Where do institutions “belong” in economic analysis? Are they exogenous or endogenous? This important point is discussed by Richard Grabowski (1988), who points to some problems in the way institutional change is treated in neoinstitutional economics. Grabowski notes that whereas neoclassical economics conventionally has assumed that institutions are *exogenous*, neoinstitutional economics as presented by Douglass North (especially in his earlier works), makes institutional change *endogenous* by viewing change from the point of actors’ choices (“rational choice theory”). According to North and other neoinstitutionalists, institutional innovation is a result of actors’ changing preferences (or changing constraints) within a cost-benefit framework. For institutional innovation to occur, either the costs of changing it must be reduced or alternatively, the benefits increased (ibid.:386). Grabowski provides a critique of this argument, by pointing out the inconsistencies this position suffers from. The norms and traditions which shape actors preferences and hence, their perceptions of costs and benefits, must, *a priori*, be a part of their constitution as actors. This means that this part of their cultural make-up as actors, cannot be made endogenous. To escape this epistemological problem, such factors have to be made external to the model. This leads to further problems, because the neoinstitutional approach can now only explain change in what is termed “secondary institutions” (such as acts and choices) but not in the primary processes that motivate action (ibid.:388).

Secondly, for the theory of induced institutional change to hold, actors must be assured that they will benefit from such change. Introducing lessons from game theory, Grabowski (ibid.:388) argues that this would be consistent with the “assurance game”, but not a “prisoner’s dilemma” type of situation where outside enforcement is necessary. Thus, induced institutional innovation may hold in the first case, but not in the latter. The reason why an assurance game situation often seems to be prevalent – and hence North’s model of institutional change valid – is because people tend to share a common ideology which serves to constrain the diversity of moral and ethical judgments. This minimizes enforcement costs, and enhances institutional stability. Rapid social change, however, tends to promote ideological diversity, which means that enforcement costs rise steeply and explains why institutional collapse seems to be a feature of such periods. In the latter case,

argues Grabowski (ibid.:390), neoinstitutional economics is unable to explain such change because of “the increased importance of enforcement costs and our inability to understand them”. Grabowski’s critique of induced institutional innovation, suggests that neoinstitutional economics is not a panacea which has solved all epistemological problems related to institutional change and innovation. There is also the question whether “rational choice theory” can account for other forms of rationality, including variations which are culturally constituted (Peters 1993:1072ff.).

### **Traditional, customary or indigenous? The problem of authenticity**

In the discussion of institutions the terms “traditional”, “customary” and “indigenous” are frequently used to specify the type of institution, or management system in question, but rarely is there an attempt to qualify their meaning or substantiate their content. “Traditional” used in connection with “management”, for example, is generally taken to mean not only a situation characterized by sustainable use and equal access to resources, but an equitably sharing of benefit as well. “Traditional” also has the connotation of being “old” and implicitly, legitimate and well adapted to available resources and to the situation of the users in question. For the same reasons, the terms “customary” and “indigenous” are seldom defined, and often used interchangeably. “Indigenous”, as in “indigenous institutions”, is frequently, and without any kind of substantiation, taken to imply that the institution is old, local in origin and promotes equity. There are dangers involved in the indiscriminate use of terms such as traditional, customary and indigenous, because they may give a stamp of authenticity to a management system which is either quite recent, or has undergone considerable change. Anthropologists, amongst others, have become increasingly aware of the fact that what is glossed as “traditional”, “customary” or “indigenous” may hide a series of complex shifts and amalgamations in the organization of rights and duties (Fortmann 1990). In addition to the problem of misinterpretation on the part of the researchers, fixing labels of this kind can be employed in order to strengthen claims to ownership, or to lay claim to existing practices. An example of this can be found in Johannes’ discussion of traditional conservation methods in Oceania, where:

Written records of traditional fishing boundaries often do not exist, and it is not surprising under the circumstances to find that villagers will invent “traditional” fishing rights if there are advantages to be gained by doing so (Johannes 1982:260).

That a system of ownership or management is “traditional”, can in other words be used to validate claims to resources.

Another term which is frequently used, but seldom questioned and scrutinized, is the word “communal” (Shackleton 1993). Researchers tend to forget that “communal property” may be glossing over what is in fact a series of shifts in tenure, rights and legislation. To illustrate the complexities of such a case, Pauline Peters has analyzed the history behind the formation of the “communal lands” of Botswana (1984, 1987). Peters claims that “the communal tenures so disfavored by the colonialists were in a very real sense created by them” (1987:181). The emergence of communal lands was made possible by transforming the complex property rights to land of the Tswana kingdom into “tribal” land by colonial authorities. Over time tribal land came to imply “communal land” in the sense that it was claimed neither by the state nor by individual leaseholders. In the early post-colonial period the term “tribal” was officially substituted by “communal” in government parlance. In the meantime, however, a lot of changes had taken place. In the period since the introduction of boreholes, from the 1930s and onwards, the grazing lands had in fact slowly changed to enclosures whereby borehole owners and their dependants claimed ownership to the area surrounding boreholes. Originally the drilling of boreholes was regulated through “tribal committees” (ibid.:184) which later became “borehole syndicates”. This did not only imply a change of name, but continued the process of creating exclusive ownership to boreholes and the surrounding pastures. Over time the control over enclosures around boreholes became tighter, and members of syndicates prevented would-be users from entering. Dominated by rich and powerful cattle owners, borehole syndicates were appropriating what officially, were still regarded as “communal lands”. Peters’ point is that if we accept “commons” or “communal property” labels and take them at face value, we are unintentionally denying their historic specific context and the contested meanings associated with them (1984:40ff.). Moreover, we would be unable to grasp what management and ownership really were like, and how they relate to the present day situation. We should also bear in mind that in Botswana, and probably in other African colonial states as well, there was a “colonial ideological antipathy to communal property systems” (1987:180). The story related in great detail by Peters has some consequences for the common mistake of equating communal ownership with equity. As we will see next, some studies explicitly link common property regimes with stratification.

Along similar lines as Peters, Angela Cheater (1990) analyzes the origins of “communal” land tenure in Zimbabwe. Her main point is that the “communal” lands never were communal. She traces the reformulations of the past (“mythogenesis”) which transformed private property rights into the present-day authorized version of Zimbabwe’s communal lands. Cheater claims that first among the many who helped establish the myth of communal lands in Zimbabwe, were the anthropologists who failed to investigate the historical foundations of property rights (ibid.:203). The idea of a pre-colonial time when communalism reigned was an integral part of the reformulation of Zimbabwe’s history which neglected “three and a half decades of the legalised sale of ‘communal’ arable [land] and grazing rights” (ibid.:194). As Cheater notes, it is important to keep in

mind that history is malleable, and tends to be altered and reformulated. The methodological problem Cheater raises, is linked with our willingness to present what we believe is the “native’s point of view”, and the danger this poses for misinterpreting the past. Moreover, Cheater’s study underlines the importance of including the state in the study of the property rights, and it is to this discussion we will now turn.

### **Hierarchy and common property regimes**

Durrenberger and Pálsson (1987a) have argued that common property regimes only make sense in conjunction with stratification, arguing that in “truly egalitarian societies...common property has no meaning” (ibid.:371). The authors take this argument even further, claiming that the regulation of common property is “a phenomenon of stratified societies organized as states” and that the “forms of production in which a tragedy of the commons can develop are societies organized as states” (ibid.:372). The view that stratification is an inherent feature of common property regimes receives strong support from Thomas Park (1992:94) who argues that stratification and hierarchy are central to successful common property regimes. Park dismisses the assumptions of equal access and equal rights, often implicit in the call for common property management. In Park’s subtle analysis of flood recession agriculture in the Senegal Basin valley, he shows that this form of agriculture lays the foundation of hierarchy and that common property is a rational way to deal with the chaotic character of river flooding. Each year when the river receded, there was a reallocation of agricultural land, and the available agricultural plots (a common pool resource) were distributed among groups of rights holders. The groups were hierarchically organized on the basis of genealogical position (core lineage members against peripheral members) and also included outsiders who could lease land in sharecropping contracts. For Park this implies that the flood recession type of agriculture:

is based neither on equal rights or duties nor on simple diversions between those with rights and those without them. It is a model of common property where hierarchy and inequality are fundamental (Park 1992:96).

Park concludes that (ibid.):

One of the basic claims of this paper is that common property in the flood recession case is intrinsically hierarchical and does not involve individuals having equal rights.

If Park is correct, this means that the idealist or populist view of common property as a means to achieve equity (in the sense of equal access to resources), is premised on a too restricted interpretation of case material, and is countered by scrutinising historical studies.

Another example of the importance of stratification and hierarchy in the successful management of common property regimes, is Gilles et al.'s (1992) study from the High Atlas mountains in Morocco. They describe the Oukaïmedene *agdal*, which is a high mountain pasture controlled by an indigenous range management system with fixed opening and closing dates. Used by two tribally organized Berber groups, parts of the *agdal* are irrigated and consist of hay meadows which due to their remoteness, have not become privatized. The reason that the two tribal groups (Ourika and Rhiraya) cooperate in managing the *agdal* is that they stand a better chance of protecting it against rival groups. Though in principle all households share collective usufruct rights to the Oukaïmedene *agdal*, there is in fact a hierarchical rights structure where some have senior, or full rights, and can use the pasture for a longer time, as well as being allowed to graze their animals at any location. In addition, they have the privilege of charging fees from other users. Those who enjoy such senior rights do so because they claim descent from a local saint. Furthermore, the ethnic divisions within the tribal groups translate into differential access to springs and hay meadows. Rights are not extended to all, and those who are denied access have the right to dispute it by bringing their case before a local council (*jmaa*). Moreover, there are informal arrangements where outsiders may use the *agdal* against offering reciprocal grazing in another location. In addition to formal regulations such as levying fines, the *agdal* is believed to be the land of a saint, and hence protected by spirits who will harm those who break rules concerning its use (ibid.:241). The finely meshed system of rights and privileges should not, say Gilles et al., be interpreted primarily as a conservation measure. The reason for the success of the Oukaïmedene *agdal* was not only that entry was restricted, but that the internal social stratification was used to establish a hierarchy of different user rights. In addition to social stratification, the Oukaïmedene *agdal* was also protected by its remoteness, meaning that not all legitimate users were able to enjoy their rights and privileges.

### **How important is tradition and local knowledge?**

In a detailed study of fishery cooperatives in Turkey, Fikret Berkes (1986, 1992) analyzes traits of the individual cooperatives and the informal rules which govern them. The areas which Berkes studied were (the number of registered fishermen in brackets): Çamlık lagoon (103), Taşucu (150), Alanya (100), Bodrum (305) and Bay of Izmir (1850). Among the first three, all or the majority of the registered fishermen were organized in one cooperative which was identical to the user group. Among the two latter, cooperatives were either lacking (Bodrum), or there were a number of smaller cooperatives (Bay of Izmir). Only the three smallest areas with less than 150 registered fishermen, showed a relative stability in absolute catch, in catch/effort ratio and the number of fishermen and vessels. They were therefore deemed to be "successful" compared to the two largest where overfishing and overcapitalization were evident (ibid.:167). The Alanya case represents an interesting example of informal regulations. The Alanya fishermen

had devised a lottery system where each vessel drew a number which corresponded to a fishing spot. The spot marked the boat's starting position when the fishing season began. From September to May the boats made daily shifts eastward from their assigned starting spot, which gave all vessels an equal chance at the best fishing sites.

Without going into the technicalities of the different locations, the important question is why local management seemed to be successful in the first three cases, but not in the latter, Bodrum and Bay of Izmir. In these two areas, the overall catch remained unchanged, but the catch per unit of effort declined (1992:167). In Bodrum, there were six different user groups, but no active cooperatives. In the Bay of Izmir, there was a total of six cooperatives, but these had been unsuccessful in finding cooperative solutions and enlist the support of all fishermen. It simply was "beyond their power" (1986:226) to agree on how to manage the fishery, and the presence of cooperatives alone was not sufficient to ensure sustainable management. The success of the smaller ones — Çamlık lagoon, Taşucu and Alanya — Berkes (ibid.:227) attributed to:

the existence of traditions and institutional arrangements such as cooperatives [which] no doubt reduces the cost of organizing local management systems and facilitates the formation and survival of user-group organizations. One pattern that emerges from the three success cases is the use of extra-local authority, such as the cooperative charter and the local mayor or gendarme.

Berkes notes that much of the literature on maritime anthropology tends to argue that *traditions*, as well as fishermen's detailed *local knowledge* are important in explaining successful fisheries. However, the three successful cooperatives do not support either of these hypothesis. In Alanya and Taşucu less than 50 per cent of the cooperative members could be termed traditional fishermen (1986:226). In the Çamlık lagoon, says Berkes, there are hardly any "traditional" fishermen — almost all of them took up fishing after 1974. "These examples", claims Berkes:

do not negate the importance of traditional knowledge and institutions, but show that their existence is not an essential precondition for a successful fishery (Berkes 1986:226).

Another important point is that the Alanya cooperative only organizes about half of the fishermen. The cooperative functions first of all to legitimize decisions about the fishing system which have been reached in an informal forum, in this case the local coffee house which serves as a hang-out for fishermen (ibid.:226).

### **A native ecology: Fact or fiction?**

Whether indigenous people have an innate ecological sense or are in a peculiar way pre-adapted to an ecologically sustainable harvesting system is debatable.



Whereas researchers tend to agree that there are systems of local resource management, there is no consensus on what their prime function was. Were they devised to protect the resource, or were they primarily a way to distribute catch among legitimate users?

In a study from New Guinea, Carrier (1987:144) argues in favour of the latter. He describes how the Ponam islanders limited entry through elaborate rights vested with lineages, but this was not done to contribute to conservation. "We cannot assume", claims Carrier, "that limited entry in Melanesian fishing societies plays a role in the conservation of marine resources" (*ibid.*:164). The prime aim of these elaborate rights was resource allocation — who gets the fish — not conservation. Carrier contends that the Ponam's notions about species ecology differ significantly from Western ecological science. What is needed, says Carrier, "is careful examination of the ways people understand their environments and the ways that ownership works in specific cultural and ecological settings" (*ibid.*:164).

The study of "customary marine tenure" grew out of the dissatisfaction with economic models for understanding fishery management. Despite their advocacy for customary marine tenure, Ruddle et al. (1992) concede that exaggerated claims to an indigenous environmental ethic have backlashed, causing some researchers to focus on the unsustainable and unsound practices in Oceania. One of the better known critiques of the claims to widespread customary marine tenure throughout Oceania is Polunin's (1984) discussion of case material from Indonesia and New Guinea. Reviewing a number of old and contemporary sources, Polunin remains unconvinced that well defined rights in the sea were a result of conscious resource management. Polunin argues that they were more likely a result of infighting between villages and a convenient way to create well-defined boundaries. Another possible explanation is that resources were not valuable enough (compared to the costs of enforcement) to warrant the development of property rights (*ibid.*:272). For regions such as the western coasts of Sumatra, Kalimantan and Sulawesi, Polunin finds no historical evidence that there ever were traditions for managing marine resources. Polunin concedes, however, that they may have existed earlier but broke down for unknown reasons.

Johannes (1981) has argued that in Melanesia, fishing rights are often so finely dispersed that when the fishery becomes commercialized it is unable to adapt, resulting in a conflict among fishermen. Rebutting this view, Cordell argues that Melanesian sea tenure cannot be judged by how well it adapts to a "Western cultural overlay" (1984:309). Instead of imposing a Western type of management, ill-fitted to local conditions, he advocates a development of fisheries which builds on the "unwritten laws of the sea embedded in the cooperative social foundation of customary sea tenure" (*ibid.*:322). This may be taken to imply that customary marine tenure always provides for sustainable management. This is, however, a point where researchers disagree.

Johannes (1978, 1982) has brought to the fore cases from Oceania where local management is radically transformed or has broken down. He also questions the assumption that local resource management everywhere is guided by an environmental ethic (1982:260). Examples such as "dynamiting of reef fish, although illegal, is widespread in Western Samoa" and "Solomon islanders harvested porpoises primarily for their teeth, letting much of the meat rot" throws doubts on claims of a uniform and innate ecological sense (Johannes 1978:355). Johannes believes that "environmentally destructive practices coexisted, as in most societies, with efforts to conserve natural resources" (ibid.:355). Whereas Baines (1991) quotes examples of the reassertion of communal property rights in the Solomon Islands, Johannes takes a more negative view of the reintroduction of traditional fishing rights in Oceania:

In addition to the resistance of some colonial governments to the institution or reinstatement of such laws, the islanders themselves are sometimes unsympathetic to such a move. Now accustomed to unlimited entry on the fishing grounds and motivated in their patterns of resource use by a money economy, many fishermen fear the short-term inconvenience and economic dislocation attending the reintroduction of reef and lagoon tenure (Johannes 1978:358-359).

Outside Oceania, an area where native ecology and environmental ethics have been closely studied, is in the circumpolar region. A recent addition to this research topic is Freeman and Carbyn's (1988) edited volume on "traditional knowledge". The main purpose of the volume is to discuss "traditional management systems...[and] ..in particular, the role of traditional communal property institutions in their management" (Berkes, in Freeman and Carbyn 1988:7). The essays aim at discussing the "philosophical underpinnings" of traditional management among various Arctic peoples (Cree, Inuit, Saami etc.). Overall, the editors claim, there is a native ecological knowledge and an environmental ethic limiting exploitation, and that this offers an alternative to Western science (ibid.:6). It could be invoked against these studies that they entail a very sympathetic reading of native ecological knowledge and practice. The authors argue that native peoples in the Arctic have an innate ecological sense, which we as Westerners should acknowledge and emulate. For this reason we could have expected more emphasis on examples such as wasting of walrus and narwhale meat (ibid.:35) which seems to contradict such claims. In fact, some have claimed "that Northern Native peoples have *no* tradition of restraint of harvesting effort" (ibid.:19, italics in original), whereas others would argue that hunting practices (such as "trap lines") do contribute to preserve breeding stock (Berkes 1981, in Acheson 1989).

To explain instances which seem to contradict the Freeman and Carbyn's argument we are left with two contending hypotheses: either native peoples' traditional ecological sense has been eroded, or this sense was never as strong as the authors claim, but was a result of the absence of a market, rather than cognitive and moral

imperatives. The first hypothesis (that there was an environmental ethic), is implicitly or explicitly found in many works on natural resource management but rarely questioned (McCay and Acheson 1987:12ff.). The examples just cited, indicate that the willingness on the part of the researchers to embrace claims to an indigenous environmental ethic may, at times, make it difficult to arrive at a disinterested and objective opinion of their merits.

### **Are informal regulations successful?**

One of the most carefully analyzed examples of elaborate informal regulations in commercial fisheries is James Acheson's studies of Maine lobstermen, in the northeastern corner of USA (1975, 1987, 1988). The case of the Maine lobster is perhaps the most frequently quoted example of successful local management, and the role played by informal regulations in managing the fishery. Many of those who quote Acheson as an example of successful informal regulations in fisheries (cf. Ruddle et al. 1992:268), fail to acknowledge that after about 1970 there was a gradual shift in the management of the lobster fishery, something Acheson describes in detail in his monograph *The Lobster Gangs of Maine* (1988). By the end of the 1970s there was a gradual transformation of the lobster fisheries, with early signs of overfishing. The Maine lobster fishery was from the start only nominally controlled by the state and the fishermen resented state intervention. The state of Maine passed its first law on the protection of berried lobsters in 1872, and in 1874 a legal minimum size was specified, as well as fixed closing periods when fishing was outlawed (Acheson 1998:5). This meagre set of formal regulations remained in place until the 1970s. Throughout the 1970s, a number of new restrictions were proposed to limit harvesting, but none of them received enough support to be passed as bills. For many years, however, fishermen had enforced a minimum size of lobster. Whereas entry to the fishery was restricted informally through recruitment to a harbour gang, the formal regulation of registered fishermen only required getting a state licence, which until 1987, everybody could purchase for a nominal fee (ibid.:89). That there were no limits to the number of traps per fisherman, compounded the problem. Fishermen invested in more expensive vessels and more efficient gear, and had to increase their fishing effort to pay the bills. By increasing their effort — more traps and more time at sea — at the same time as the ranks of fishermen swelled, the net returns became so low that many fishermen were forced out of the industry. There was widespread dissatisfaction with the way the fishery decayed (1988:136), but it seems that fishermen were unable to do anything about it, since offenders were not breaking any rules, merely exploiting the freedom to fish as much and hard as possible. Overcoming their previous suspicion of government regulations, by 1986 more than 90 per cent of the fishermen favoured a maximum limit to the number of fishing licences and the number of traps (ibid.:137).

The material presented in great detail by Acheson is a case where a small number of formal regulations coexisted with informal regulations of recruitment to harbour gangs and a territorial division of fishing areas. Those who see in this case material only the success of a local management system are neglecting the limitations of informal regulations which became evident during the 1980s. The problems of overcapitalization and overcapacity forced fishermen to change their initial hostility towards government intervention and to accept the necessity of formal regulations. Unable to agree on how to control the fishery through informal means themselves, fishermen turned to the state for help, and in the process, transferred the costs of policing and punishing breaches of regulations onto the state.

Summing up the Maine lobstering experience and its relevance for “common property theory”, Acheson (1988:142ff.) concludes that it confirms the role property rights play for the conservation of resources, but does not support those who think communal property is the same as “open-access”. Whereas local institutions for a long time were able to prevent a tragedy of the commons situation, in the end the Maine lobster fishery collapsed, not because entry was not restricted – it was – but because individual fishermen were free to increase their fishing effort. In this sense, it followed the implied logic of Gordon’s (1954) “common property theory”. Is, then, the Maine lobster industry a case in support of local management of resources? The answer depends on which period we choose to analyze. Without doubt, the informal framework based on territoriality did work properly until the 1970s. However, in the period which followed, the informal arrangements lacked the enforcement capability needed to restrain the escalating capitalization and overfishing.

### **The problem of innovation: The Bijagòs fishery**

As Gordon (1954) rightly identified, the enduring problem in the commercial fishery sector is overcapitalization (or overcapacity), and successful fishermen must in addition to catching fish, also be good at managing capital (Acheson 1989:292). Harvesting fish with modern gear is capital intensive, and heavy investments are in turn an incentive to increase fishing effort, leading, ultimately, to overfishing. In the literature of fishery, there is a tendency to juxtapose the capital intensive fishery sector with what is termed “artisanal fishery” or the “artisanal sector”. Artisanal fisheries may be defined as small-scale fisheries, using simple gear and primarily exploiting inshore or coastal fishery resources. Most often, only a smaller part of the catch is marketed and the rest bartered or consumed locally (Tvedten and Hersoug 1992:11). The interesting question is under which circumstances will artisanal fisheries become commercial enterprises, in other words, to what degree are artisanal fisheries preadapted to capital intensive, commercial production methods?

An example of this can be found in Inge Tvedten's (1990) study of fishermen in the Bijagòs archipelago, off the coast of Guinea-Bissau. The Bijagò are artisanal fishermen who use traps, lines, gill nets and more lately, beach-seine and drift nets. The fishery is based on canoes, but only about one fifth of the canoes are outfitted with an outboard motor. Though the Bijagò Islands have increasingly been drawn into the national economy, there has only been a negligible commercialization of the fishery. The reason is, according to Tvedten, to be found in the age-grade institution, where men who aspire to a higher age-grade, must invest goods and money as ceremonial contributions (*grandessa*). This means that surplus produce is reinvested in the age-grade institution, rather than in the fishery itself. In fact, ceremonial contributions may account for 50 to 75 per cent of household expenditures (ibid.:128).

The case discussed by Tvedten is an interesting example of the problem of how to classify institutions which inadvertently preserve resources. From Tvedten's description it seems that there were no institutional measures among the Bijagò fishermen aimed at regulating fishing effort. However, by reserving a large proportion of the catch for ceremonial exchange, less surplus was available to modernize the fishery. In response to the stagnant fishery, many younger fishermen retreated to subsistence production or left the fishery. The limited capitalization of the Bijagò fishery represents an analytical problem. Should it be interpreted as an example of successful local management – whether intentional or not – or should it be treated as a problem for the development of the artisanal fishery sector? The Bijagò case seems to fit with Lees' observation that:

disincentives, while protecting the pool of common property resources, also curb individual entrepreneurship, investment, experimentation, and innovation (Lees 1993:109).

We may take this argument a step further. Some attribute sustainable resource management to pre-modernity and to the absence of a market. Breakdown of traditional institutions is supposed to happen when the "hidden hand" of market forces transforms the traditional sector. In the case described by Tvedten it is obvious that the Bijagò fishermen were part of a modern, and fully integrated market sector, but that their consumption pattern hindered an adequate investment of surplus in the fishery.

### **Local control with resources?**

Whereas it is an established fact that informal and formal regulations often co-exist in fisheries, there are few studies on the origins and history of informal regulations. Moreover, studies of informal regulations tend to advocate more local control. An interesting study because it confronts this advocacy for more local control with resources, is Lawrence Taylor's (1987) study of a fishing community in the Gaelic-speaking western part of Ireland. Taylor questions whether

“community rights” are a romantic notion which appeals to social scientists, or a universal type of rights common to all functioning systems of common property management. The villagers had *de facto* rights to the salmon fisheries in the Donegal Bay estuary but the *de jure* rights were shared between the Irish government and a Gaelic non-profit organization, the Gael-Linn, which bought the fishing rights in the late 1950s. The fishing in the estuary and upstream in the river was illegal, but widespread due to the lack of government control.

Fishing in the river was organized by a local system where boats took turns at fishing upstream with a purse seine. The fishermen uniformly explained this as being a very old cooperative system, hence legitimate and immutable. Most likely, claims Taylor, the rotational system is more recent in origin, and the fishermen’s version of the past is at odds with reports and historical records which tell of endemic strife, clashes and lawsuits among fishermen (ibid.:298). The interesting part is that the collective memory of fishermen now locates the origins of the management system firmly in a distant past, hence makes it immutable. Attempts to change the system, and especially to buy back the rights of fishing, a suggestion made by a well-meaning local priest, was vehemently opposed. People believed that if the salmon fishery was to become their *de jure* property, it would turn them against each other. In the ensuing fight among villagers, a local man disclosed to Taylor, “the river would run red with blood” (ibid.:291). Why did the villagers not want to take formal control of the fishery? To answer this question one needs to consider the history of resource management in Gaelic villages.

Until the early 19th century the Gaelic villages had functioned as local territorial units (*clachan*), which held collective rights in the surrounding resources. Whereas the property relations have changed, the *clachan* now survives as a communal ideal, where people have reciprocal obligations to help each other (ibid.:294). Moreover, since villagers had historically been denied rights to the salmon fishery, they had seen it as their privilege to poach. This traditionally united villagers against the feudal owners of the river during the 19th century, and in modern times, the bailiffs and agents representing the Gael-Linn and the government in Dublin (ibid.:295). As long as the enforcement of regulations lay outside the community, fishing (or poaching) did not challenge communal ideals. If, on the other hand, the rights to the fishery were bought back, as suggested by the local priest, villagers would end up policing each other — a horrifying thought in a close knit community. As a villager put it; “if I saw that man down pooching [sic] and he’s my cousin...I couldn’t tell him to stop. We’re all too close here” (ibid.:303). Trying to reinstate the corporate nature of resource ownership by buying back the legal entitlement to the fishery would, argues Taylor, militate against the egalitarian ethos of the village, and only by not owning “the resource in common are villagers able to cooperate” (ibid.:304). On a more general level, Taylor offers this example as a warning against introducing a system based on contractual agreements [cf. Tönnies’ *Gesellschaft*] in a setting which predominantly is defined by status and egalitarianism typical of the community [*Gemeinschaft*].

## **Giving up local control with resources: A Kenyan example**

Jean Ensminger (1990) has analyzed the transition from local management to state governance of resources among the pastoral Orma of northeastern Kenya. From 1960 and onwards the Orma were gradually sedentarized, and at the same time they were alienated from vast tracts of land which were used to create game reserves and irrigation schemes. Sedentarization and population growth meant that the Orma started to exclude nomadic pastoralists from using areas around their villages. After the Sahelian droughts from 1968 to 1974, sedentarization rose and consequently the restrictions on grazing were tightened. At this point, elders who until then had mediated disputes, relinquished their control to the state. In order to explain this change Ensminger makes a number of interesting points. First, the council of elders had serious problems with arriving at consensual decisions in the new environment, and they often had to literally buy compliance from those who were unwilling to support the majority view (ibid.:670). Secondly, economic diversification meant that young men took up new trades and left pastoralism. This in turn meant that elder men lost the privilege of controlling younger men. Independent young men were able to circumvent marriage proscriptions (clan exogamy), thereby eroding the power of elders who formerly had been in the position to control arranged marriages. In the end, the council of elders felt that more could be achieved by yielding control to the state. The state was not dependent upon consensus decisions and majority votes could be backed by force.

Central to Ensminger's analysis is the fact that Orma elders willingly gave up their control of resource management. The devolution of local power was a result of socio-economic change which placed heavy burdens on traditional institutions and made state management the only realistic alternative. For our purpose, this is the most interesting part of Ensminger's analysis, and testifies to the fact that attempts to "empower" or "enable" traditional institutions sometimes can be motivated by wishful thinking rather than careful analysis. The theoretical underpinnings of Ensminger's analysis is neoinstitutional economics, and she makes use of a transaction cost perspective to show the dramatic rise in costs of enforcing decisions, thus it is not the rules which have changed but the environment for their enforcement.

## **Conclusion**

Despite a hectic research activity, there is a considerable redundancy in the study of common property regimes, and a tendency to repeat arguments and launch criticisms which have already been absorbed by the research community. This is regrettable, because it has obscured the need for a fresh look in the nooks and crannies of the field itself to identify new research themes, which may pave the way for a novel research agenda, and a need for restructuring the conventional framing of the "tragedy of the commons" paradigm.

The study of common property regimes is a field which attracts both political scientists, economists and anthropologists. The field is multi-disciplinary rather than inter-disciplinary, and a prerequisite for the strengthening of the study of common property regimes is a tighter integration between empirical and theoretical analyses. Theory, however, is to a considerable degree the domain of economists, whereas empirical studies – particularly in the field of renewable natural resources – is the domain of the anthropologist. It is symptomatic that “common property theory” is regarded as providing a fundamental insight by economists, but, is almost unanimously rejected by anthropologists. As Brox (1990:228) has pointed out, this is grounded in a failure to distinguish between analytical theories and empirical models. “Common property theory” is neither a natural law nor a hypothesis but a theory.

What has anthropology’s contribution to theory been? Apart from empirically grounded analyses of local management systems, the contribution of anthropology has first of all been the documentation of informal regulations and systems of local resource management (cf. Acheson 1988). This is of course important in itself. It is a problem, however, that the new empirical findings are generally used only to debate substantive positions, but rarely to use these findings to build new or alternative theory. To make any headway, there seems to be a need for an integrated approach, which may include biologists, economists, political scientists and anthropologists. An obstacle to such an interdisciplinary exercise has been the problem of finding a “language that makes interdisciplinary discourse possible” (Brox 1990:227). A first step in this direction is a willingness to become familiar with modes of analysis and key concepts of related disciplines.

The study of institutions is a field with interdisciplinary qualities, and has a distinguished ancestry both in economics, political science and anthropology. The study of “institutions” is also an attempt to model human behaviour and choice and identify what it is that structures human agency in society and, more fundamentally, why human society is not a Hobbesian anarchy as the logic of the “prisoner’s dilemma” would suggest. The concept of institutions is used in order to grasp processes which contribute to change and continuity in social life, and as such, institutions serve primarily as heuristic devices. However, one should be careful with reifying institutions: an institution is not a “thing” or a tangible object (North 1990:107). Instead, institutions are analytical constructs which we employ in order to analyze, and hopefully, explain particular aspects of social life and human behaviour. Institutions are also analytically important in order to connect the micro-level of agents and choice, with the macro-level outcome which broadly, we may term society.

The term “institution” is analytically ambiguous and plural, and is often used in a haphazard manner. Hence, the paper has emphasized the need for a clearer analytical precision in the use of the terms “institution” and “institutional”. Moreover, there is a need to integrate lessons from the field of economics to



explain institutional change in general, and the transition from communal to private property rights in particular. The paper has discussed the contribution of one approach which offers a theoretical framework for studying institutions, namely neoinstitutional economics (North 1990). Neoinstitutional economics incorporates a theory of property rights (largely borrowed from the "property rights school"), the concept of transaction costs (hailing from Ronald Coase), and a theory of institutions (with the roots in the institutionalist approach of Karl Polanyi). Despite the critique of neoinstitutional economics (Field 1981), it remains an approach which offers analytical tools to the study of property regimes, and helps to explain why private property replaces common property regimes or cases where common property regimes persist. However, the problem of explaining institutional change and innovation is still elusive, and there are epistemological problems linked to the notion of "induced institutional innovation" (Grabowski 1988).

Effective institutions are able to provide the *assurance* that other users will cooperate in the best interest of the collective, and this can be achieved by finding the right balance between incentives, costs and penalties. If enough members ("the critical mass") find that it is to their advantage to cooperate, this will spur the rest to do the same (Runge 1992). However, a variety of factors may affect to what degree institutions are able to provide compliance with informal rules and regulations. During times of rapid social change, enforcement costs rise and may exhaust the communal ethos which ensured group solidarity. In some cases, local institutions lack the legitimacy for penalizing offenders, because they were rooted in an egalitarian ideology which made coercion impossible (Ensminger 1990).

Managing scarce resources mandates rules of exclusion and inclusion (Ostrom 1990). In many cases, however, a further subdivision of user-rights may be needed. This can be accomplished by a system of graded access, ranging from full rights to limited rights. Instituting graded access rights to a commons may take advantage of inherent systems of stratification in a society to create a hierarchy of user groups (Park 1992). Some groups might enjoy more liberal access than others or have wider rights of resource extraction (Gilles et al. 1992). This suggests that we should avoid the frequent mistake of making common property regimes synonymous with equity when, instead, they often are premised on hierarchy.

The sympathetic reading of local ecological practice may lead to the conclusion that indigenous peoples everywhere manage resources (Freeman and Carbyn 1988). This is not altogether clear, and instead, we need to question not only whether there is an environmental ethic (Johannes 1982), but if there are local management systems at all (Polunin 1984).

Moreover, it is a problem that research among small-scale communities has often been conducted as if history did not matter. The adoption of a longer time frame

makes it possible to say something about the origins of institutions for common property management (Netting 1981), as well as identifying features of enduring common property regimes (Ostrom 1990). Historical studies have also uncovered the need for a critical reflection when using concepts such as “traditional” and “customary” which may be used to validate claims to resources among user groups (Johannes 1982). The problem of authenticity is also reflected in the use of the term “communal”, whose meaning can be transformed and manipulated by colonial (Peters 1987) and post-colonial authorities (Cheater 1990). Recasting and reformulating the past in a mythological hotchpotch of communalism can also be found among small-scale communities (Taylor 1987).

### **The “success” or the “tragedy” of the commons?**

The two extreme positions of the debate on common property regimes may be termed the “success” and the “tragedy” of the commons respectively (Sandersen n.d.). The “tragedy of the commons” position (Hardin 1968) is theoretically linked to the claim that private property regimes represent the apex of an evolutionary process (Demsetz 1967). The “success on the commons” perspective, on the other hand, claims that common property regimes are regulated through informal management systems, are not free for everybody to use and are frequently underpinned by local systems of ecological (“traditional”) knowledge (Freeman and Carbyn 1988). The contrasting views on common property regimes reflect different analytical vantage points. Anthropologists tend to focus on common property regimes as a *cultural adaption*, a management regime which reflects a communal ethos (Taylor 1987). This perspective is commonly used as an argument in favour of communal property arrangements as a means to achieve equity and sustainability. Opposed to this perspective, economists tend to analyze common property regimes as an *economic system* (Gordon 1954) – judging common property regimes on the basis of their effectiveness and distributional effects – or as “games” where different scenarios can be modelled mathematically (Runge 1992). As we have seen, actors’ economic behaviour are constrained by *both* economic and cultural factors. Moreover, standard economic models do not normally account for the variety of *informal* regulations which affect resource management (cf. Acheson 1988).

Finally, durable management systems may reflect a robust institutional setting, and hence can be described as success stories. However, they may alternatively be viewed as an inability to adapt to commercialization (Johannes 1981). This contradiction is so important that it is worth repeating Lees’ observation that:

disincentives, while protecting the pool of common property resources, also curb individual entrepreneurship, investment, experimentation, and innovation (Lees 1993:109).

Lees' point should not be taken lightly: if she is right, there is a need for "rethinking the commons", both as an analytical construct and as an object of study.

### **Rethinking the commons?**

In the beginning of this paper it was claimed that research on common property regimes has been stifled by the tendency to refine and re-use familiar and well-worn arguments instead of questioning them (Lees 1993). Instead of a further refinement along existing lines of scholarship, we first need to ask: what is the object of study?

More than a conceptual confusion (Bromley and Cernea 1989), "common property" as an object of study is blurred: Is "common property" a) primarily a behavioural relation between men (Furubotn and Pejovich 1972); b) a question of agents and choice which can be solved through balancing incentives (e.g., penalties) (Runge 1992); c) foremost a problem of markets (Bromley 1989) and a question of "getting the prices right" (Nicholson 1993:7); or finally, d) a question of institutions and how institutions structure human action (North 1990)?

The answer is, it seems, that the study of common property regimes needs to integrate all these modes of analysis. Naturally, different theoretical approaches prescribe different solutions to the "tragedy of the commons" problem; state intervention and coercion, privatization, markets and price mechanisms, and institutional design. In this paper the emphasis has been on the latter (institutional design) and the question has been raised whether institutions contribute to conservation. In retrospect, it can be argued that this question cannot be answered because it is too general: to answer it, we need to ask a) what is an "institution" (analytically), and b) which social phenomena qualify as an institution (empirically) (North 1991).

The blunt statement of a fisherman: "Boats don't fish, people do" (Miller and van Maanen 1979), may seem a self-evident empirical fact. In the study of institutions, however, the distinction between *objects* and *agents* is often missing. Institutions in themselves do not conserve, but reflect processes of human agency. The study of institutions, therefore, cannot progress without a theory of action. Rational choice is a theory of human agency which underpins both neoclassical and neoinstitutional economics. However, rational choice is not a theoretical panacea for understanding human behaviour. Rationality differs from the vantage point of the individual and that of the collective (Olson 1965). Moreover, as game theory has demonstrated, unconstrained actors tend to "free ride" (Runge 1984).

Does this mean that Hardin's "heuristic fable" (McEvoy 1988:213) – the tragedy of the commons – was correct after all? As several authors have taken pains to

demonstrate, actors are implicated in dense social networks and webs of social relationships, which serve to constrain their individual freedom of action. This is true not only of complex societies in the developing world (Tvedten 1990), but also a feature of modern societies in the West (Acheson 1988). Besides, cultural proscriptions may hinder commercialization (Johannes 1981), which, generally speaking, is a prerequisite for privatization to occur.

The prospect of integrating the two contesting paradigms of human behaviour — *Homo economicus* and *Homo sociologicus* — are slim and this duality will continue to provoke debate in the social sciences. That Hardin preferred the former over the latter does not imply that he was “wrong”. Instead Hardin should be credited for bringing our attention to questions of great importance, simply rebutting or rephrasing his argument brings us nowhere. To advance the study of common property regimes it is necessary to recast old questions, reformulate research designs and refine our analytical tools.

## References

- Acheson, James M. 1975. "The lobster fiefs: Economic and ecological effects of territoriality in the Maine lobster industry". *Human Ecology*, 3(3):183-207.
- Acheson, James M. 1987. "The lobster fiefs revisited: Economic and ecological effects of territoriality in Maine lobster fishing". In: B. J. McCay and J. M. Acheson (eds.). *The Question of the Commons*. Tucson: The University of Arizona Press .
- Acheson, James M. 1988. *The Lobster Gangs of Maine*. Hanover and London: University Press of New England.
- Acheson, James M. 1989. "Management of common property resources". In: Stuart Plattner (ed.). *Economic Anthropology*. Stanford: Stanford University Press, pp. 351-378.
- Angelsen, Arild. 1993. *Individual choice under uncertainty*. Bergen: The Chr. Michelsen Institute, Working paper 1993:4.
- Askvik, Steinar. 1993. "Institution-building and planned organisational change in development assistance". *Forum for Development Studies*, 2:149-165.
- Baines, Graham B.K. 1991. "Asserting traditional rights: Community conservation in the Solomon Islands". *Cultural Survival Quarterly*, 15(2):49-52.
- Barnes, J. A. 1990. "Modelling: for real or for fun". In: J.A. Barnes. *Models and Interpretations: Selected Essays*. Cambridge: Cambridge University Press, pp. 215-226.
- Bateson, Gregory. 1972. *Steps to an Ecology of Mind*. New York: Ballantine Books.
- Berkes, Fikret. 1986. "Local-level management and the commons problem: A comparative study of Turkish coastal fisheries". *Marine Policy*, 10 (July):215-229.
- Berkes, Fikret (ed.). 1989. *Common Property Resources: Ecology and Community-Based Sustainable Development*. London: Belhaven Press.
- Berkes, Fikret. 1992. "Success and failure in marine coastal fisheries in Turkey". In: D.W. Bromley (ed.). *Making the Commons Work: Theory, Practice, and Policy*. San Francisco: ICS Press.
- Bromley, Daniel W. 1989. "Entitlements, missing markets, and environmental uncertainty". *Journal of Environmental Economics and Management*, 17(September):181-194.
- Bromley, Daniel W. and Michael M. Cernea. 1989. *The Management of Common Property Natural Resources. Some Conceptual and Operational Fallacies*. Washington D.C.: World Bank Discussion Papers, No 57.
- Bromley, Daniel W. (ed.). 1992. *Making the Commons Work. Theory, Practice and Policy*. San Francisco: Institute for Contemporary Studies Press.

- Brox, Ottar. 1990. "The common property theory: Epistemological status and analytical utility". *Human Organization*, 49(3):227-235.
- Brox, Ottar. 1991. *Praktisk Samfunnsvitenskap*. Oslo: Universitetsforlaget.
- Carrier, James G. 1987. "Marine tenure and conservation in Papua New Guinea: Problems in interpretation". In: B. J. McCay and J. M. Acheson (eds.). *The Question of the Commons*. Tucson: The University of Arizona Press, pp. 142-167.
- Cheater, Angela. 1990. "The ideology of 'communal' land tenure in Zimbabwe: Mythogenesis enacted?". *Africa*, 69(2):188-206.
- Ciriacy-Wantrup, S. and R. Bishop. 1975. "'Common property' as a concept in natural resources policy". *Natural Resources Journal*, 15(October):715-727.
- Coase, Ronald H. 1937. "The nature of the firm". *Economica*, 4(3):386-405.
- Coase, Ronald H. 1960. "The problem of social cost". *Journal of Law and Economics*, 3:1-44.
- Cordell, John C. 1984. "Defending customary inshore sea rights". In: T. Akimichi and K. Ruddle (eds.). *Maritime Institutions in the Western Pacific*. Osaka: National Museum of Ethnology, Senri Ethnological Studies No. 17, pp. 301-326 .
- Demsetz, Harold. 1967. "Toward a theory of property rights". *American Economic Review*, 57:347-359.
- Douglas, Mary. 1986. *How Institutions Think*. Syracuse, NY: Syracuse University Press.
- Durrenberger, E. Paul and Gisli Pálsson (a). 1987. "The grass roots and the state: Resource management in Islandic fishing". In: B. J. McCay and J. M. Acheson (eds.). *The Question of the Commons*. Tucson, Arizona: The University of Arizona Press.
- Eggertsson, Thráinn. 1990. *Economic Behavior and Institutions*. London: Cambridge University Press.
- Ensminger, Jean. 1990. "Co-opting the elders: The political economy of state incorporation in Africa". *American Anthropologist*, 92(3):662-675.
- Field, Barry C. 1992. "Book review: 'Governing the Commons: The Evolution of Institutions for Collective Action' (Elinor Ostrom)". *Land Economics*, 68(3):354-357.
- Field, Alexander J. 1981. "The problem with neoclassical institutional economics: A critique with special reference to the North/Thomas model of pre-1500 Europe". *Explorations in Economic History*, 18(3):174-198.
- Fortmann, Louise. 1990. "Locality and custom: Non-aboriginal claims to customary usufructory rights as a source of rural protest". *Journal of Rural Studies*, 6(2):195-208.
- Freeman, Milton M.R. and Ludwig N. Carbyn (eds.). 1988. *Traditional Knowledge and Renewable Resource Management in Northern Regions*. Edmonton, Alberta: Boreal Institute for Northern Studies.
- Furubotn, E.H. and S. Pejovich. 1972. "Property rights and economic theory: A survey of recent literature". *Journal of Economic Literature*, 10:1137-1162.

- Geertz, Clifford. 1973. *The Interpretation of Cultures*. New York: Basic Books Inc.
- Gilles, Jere L., Abdellah Hammoudi and Mohamed Mahdi. 1992. "Oukaimedene, Morocco: A high mountain agdal". In: Daniel W. Bromley (ed.). *Making the Commons Work*. San Francisco: ISC Press, pp. 229-246.
- Gordon, H. Scott. 1954. "The economic theory of a common property resource: The fishery". *Journal of Political Economy*, 62:124-142.
- Grabowski, Richard. 1988. "The theory of induced institutional innovation: A critique". *World Development*, 16(3):385-394.
- Halperin, Rhoda H. 1984. "Polanyi, Marx, and the institutional paradigm in economic anthropology". *Research in Economic Anthropology*, 6:245-272.
- Hardin, Garrett. 1968. "The tragedy of the commons". *Science*, 162(December):1243-1248.
- Johannes, R. E. 1978. "Traditional marine conservation methods in Oceania and their demise". *Annual Review of Ecology and Systematics*, 9:349-364.
- Johannes, R. E. 1982. "Traditional conservation methods and protected marine areas in Oceania". *Ambio*, 11:258-261.
- Johannes, R.E. 1981. *Words of the Lagoon: Fishing and Marine Lore in the Palau District of Micronesia*. Berkeley: University of California Press.
- Lees, Susan H. 1993. "Book review: Making the commons work: Theory, practice, and policy. D. Bromley (ed). 1993". *Human Ecology*, 21(1):106-109.
- Lévi-Strauss, Claude. 1966. *The Savage Mind*. Chicago: The University of Chicago Press.
- Libecap, Gary D. 1986. "Property rights in economic history: Implications for research". *Explorations in Economic History*, 23:227-252.
- McCay, Bonnie J. and James M. Acheson (eds.). 1987. *The Question of the Commons: The Culture and Ecology of Communal Resources*. Tucson, Arizona: The University of Arizona Press.
- McCay, Bonnie J. 1987. "The culture of the commoners: Historical observations on old and new world fisheries". In: B. J. McCay and J. M. Acheson (eds.). *The Question of the Commons*. Tucson: The University of Arizona Press.
- McCay, Bonnie J. 1993. "Common and private concerns". Paper prepared for the Nordic Symposium 'Anthropology and Nature', Thorshavn, Faroe Islands, October 28-30.
- McEvoy, Arthur F. 1988. "Toward an interactive theory of nature and culture: Ecology, production, and cognition in the California fishing industry". In: D. Worster (ed.). *The Ends of the Earth: Perspectives on Modern Environmental History*. Cambridge: Cambridge University Press.
- McKean, Margaret A. 1992. "Success on the commons: A comparative examination of institutions for common property resource management". *Journal of Theoretical Politics*, 4(3):247-281.

- Miller, M. L. and J. van Maanen. 1979. "'Boats don't fish, people do': Some ethnographic notes on the federal management of fisheries in Gloucester". *Human Organization*, 38(4):377-385.
- Netting, Robert McC. 1981. *Balancing on an Alp: Ecological Change & Continuity in a Swiss Mountain Community*. Cambridge: Cambridge University Press.
- Nicholson, Norman. 1993. "The state of the art ". In: V. Ostrom, D. Feeny and H. Picht (eds.). *Rethinking Institutional Analysis and Development*. San Francisco: ICS Press.
- North, Douglass. 1977. "Markets and other allocation systems in history: The challenge of Karl Polanyi". *Journal of European Economic History*, 6(3):703-716.
- North, Douglass. 1990. *Institutions, Institutional Change and Economical Performance*. Cambridge: Cambridge University Press.
- North, Douglass. 1991. "Institutions". *Journal of Economic Perspectives*, 5(1):97-112.
- Oakerson, Ronald J. 1992. "Analyzing the commons: A framework". In: D. W. Bromley (ed.). *Making the Commons Work*. San Francisco: ICS Press, pp. 41-59.
- Olson, Mancur. 1965. *The Logic of Collective Action*. Cambridge: Harvard University Press.
- Ostrom, Elinor. 1986. "An agenda for the study of institutions". *Public Choice*, 48:3-25.
- Ostrom, Elinor. 1990. *Governing the Commons: The Evolution of Institutions for Collective Action*. Cambridge: Cambridge University Press.
- Park, Thomas K. 1992. "Early trends toward class stratification: Chaos, common property, and flood recession agriculture". *American Anthropologist*, 94(1):90-117.
- Peters, Pauline E. 1984. "Struggles over water, struggles over meaning: Cattle, water and the state in Botswana". *Africa*, 54(3):21-49.
- Peters, Pauline E. 1993. "Is 'rational choice' the best choice for Robert Bates? An anthropologist's reading of Bates's work". *World Development*, 21:6(1063-1076).
- Peters, Pauline E.. 1987. "Embedded systems and rooted models: The grazing lands of Botswana and the commons debate". In: B. J. McCay and J. M. Acheson (eds.). *The Question of the Commons*. Tucson: The University of Arizona Press, pp. 171-194.
- Polanyi, Karl. 1944. *The Great Transformation*. New York: Rhinehart.
- Polunin, Nicholas V.C. 1984. "Do traditional marine 'reserves' conserve? A view of Indonesian and New Guinea evidence". In: T. Akimichi and K. Ruddle (eds.). *Maritime Institutions in the Western Pacific*. Osaka: National Museum of Ethnology, Senri Ethnological Studies, No 17, pp. 267-283.
- Riddell, J. C. 1982. *Land Tenure Issues in West African Livestock and Range Development Projects*. Research Paper No. 77, Land Tenure Center. Madison: University of Wisconsin.



- Rose, Carol. 1986. "The comedy of the commons: Custom, commerce, and inherently common property". *The University of Chicago Law Review*, 53(3):711-781.
- Ruddle, Kenneth, E. Hviding and R.E. Johannes. 1992. "Marine resources management in the context of customary tenure". *Marine Resource Economics*, 7:249-273.
- Runge, Carlisle Ford. 1992. "Common property and collective action in economic development". In: D. Bromley (ed.). *Making the Commons Work*. San Francisco: ICS Press.
- Runge, Carlisle Ford (a). 1984. "Strategic independence in models of property rights". *American Journal of Agricultural Economics*, 66:807-813.
- Shackleton, C. M. 1993. "Are the communal grazing lands in need of saving?". *Development Southern Africa*, 10(1):65-78.
- Taylor, Lawrence. 1987. "'The river would run red with blood': Community and common property in an Irish fishing settlement". In: B. J. McCay and J. M. Acheson (eds.). *The Question of the Commons*. Tucson: The University of Arizona Press, pp. 290-307.
- Tvedten, Inge. 1990. "The difficult transition from subsistence to commercial fishing: The case of the Bijagòs of Guinea-Bissau". *Maritime Anthropological Studies (MAST)*, 3(1):119:130.
- Tvedten, Inge and Bjørn Hersoug (eds.). 1992. *Fishing for Development: Small-Scale Fisheries in Africa*. Upsala: The Scandinavian Institute of African Studies.
- Weiner, James F. 1994. "Myth and metaphor". In: T. Ingold (ed.). *Companion Encyclopedia of Anthropology*. London and New York: Routledge, pp. 591-612.
- Wolf, Eric. 1990. Distinguished Lecture: Facing Power. *American Anthropologist*, 92(3):586-596.