CO-MANAGING THE COMMONS

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ABSTRACT

Boundaries of towns, counties, states, and nations are challenged by notions of 'bioregional' political-cultural entities shaped by the flow of water, the brush of air, and the fall of pollen. Resource management agency missions once defined by the demands of commodity production and needs of communities formed around resource extraction have been redefined. They increasingly focus on the sustainability of such systems and on conservation and the preservation of species and the habitats and ecological communities on which they depend.

INTRODUCTION

In fisheries, the issue of linkages between stakeholders comes up under the topics of community-based management, user participation in management, and 'co-management.' Co-management deserves special attention. It is one of many different possible relationships between government agencies and local communities concerning resource management. Co-management involves power sharing. Other relationships include consultative and advisory roles for local communities. The co-management strategy is distinct from community-based management in that it explicitly recognizes that government agencies and NGOs often must be involved in a community's affairs, for a variety of reasons including needs for resources not available in the community. However, it also recognizes the importance of community control over and responsibility for many aspects of resource management. In this paper I discuss conditions for successful co-management.

This workshop is part of an incomplete, halting, but genuine transition in natural resource management, the goal of which is sometimes called 'ecosystem management' (1)

'Traditional' Natural Resource Management

- Utilitarian Values
- Production-Oriented (MSY)
- Single-Species Population
- Scientific Monopoly on Data and Analysis
- Deterministic Scientific Models
- Top-Down, Govt. and Expert-Based

Ecosystem 'Management'

- Utilitarian and 'Land Ethic' Values
- Multiple-Species, Habitat, Interactions, Chaos, Discontinuities
- Humbler Science, Accepting Uncertainty
- Adaptive Management – Learning In Doing
- Bioregional Governance
- Active, Engaged Human Communities
- Respect for, and Use of, Knowledge and Experience of Resource Users
- Bottom-Up, Collaborative

In general, Ecosystem Management encompasses both a broadening of the natural world at stake – to watersheds, drainages, basins, and other larger eco-systems, and to a more diverse assemblage of flora and fauna – and a broadening of the roles of stakeholders in the social world, to more direct and collaborative participation in decision-making.

Boundaries of towns, counties, states, and nations are challenged by notions of 'bioregional' political-cultural entities shaped by the flow of water, the brush of air, and the fall of pollen. Resource management agency missions once defined by the demands of commodity production and needs of communities formed around resource-extraction have been redefined. They increasingly focus on the sustainability of such systems and on conservation and the preservation of species and the habitats and ecological communities on which they depend.

At the same time, and somewhat paradoxically, local and distant communities of place and of interest have gained footholds in the cliffs of power and authority, such that they have been able to challenge the dominance of the professional elite. Property rights play interesting and sometimes contradictory roles in this. On the one hand, private property owners struggle to protect their property values against what they construe as 'takings' requiring compensation, and landed-property owners form the backbone of effective large-scale political coalitions against ecologically-relevant natural resource management, particularly but not exclusively in the West. But the 'local control' argument bespeaks a more 'community-based' vision of resource management as well.

MARKET AND COMMUNITY FAILURE

Today's focus on community-based resource management has intellectual roots in controversies about the role of property rights in resource management. The problem is that the familiar Tragedy of the Commons model used to explain why resources are often overexploited and people are often poor, puts too much emphasis on conditions such as open access or imperfect property rights, and the alleged failure of market-mechanisms therefore to curb the tendency for individual rationality to result in social and ecological damage.

In a recent paper (McCay and Jentoft 1998), Svein Jentoft and I develop the idea that tragedies of the commons be thought of as instances of 'community failure' as much as of 'market failure.' The literature to date emphasizes market failure: How the lack of secure, exclusive property rights creates incentive and reward structures that encourage people to emphasize their own

short-term interests and to shift the costs of their actions onto other people, the environment, and the future. With exclusive, secure property rights in a resource, the 'externalities' can become internally recognized and reconciled costs and benefits. This powerful and popular view leads to prescriptions of either using the powers and expertise of government to regulate the commons or to let market forces do it through privatization.

As powerful and appropriate as this way of understanding the world may be in many situations, it is seriously inadequate in its treatment of individuals and communities, as well as the potentials for involvement of resource users in management of the commons. It completely neglects the embeddedness of economic action within social relationships and configurations of meaning, with the consequence of marginalizing the social and the cultural (for other criticisms, see Endnote 2). We therefore suggest an alternative or complementary statement of the problem: 'Community Failure,' due to the absence of or weakened capacities to manage the commons.

This statement of the problem offers some alternative and complementary solutions as well: correct 'community failure' by helping resource users and the communities of place or interest in which they are involved to build upon or create management institutions. Among the ways this can be done are 'community-based resource management' and 'co-management.'

PERSPECTIVE ON COMMUNITY

A. What Is 'Community'

A critical issue is what community is. There is a tendency to essentialize it, to grant it a life and reality of its own, which resonates perhaps with the experience and culture of the writer and readers involved. Thus, when we talk of 'community-based management' or 'co-management' we are talking about well-defined social groupings that are easy to find because they are all in one place. But increasingly – with the high level of mobility of many people and the globalization of their worlds – it is no longer adequate to see 'community' as having a readily identifiable geographic, ethnic, and political integrity. We may be talking about communities of place, Diaspora communities, and communities of shared occupation and interest. "... [A] loose and expansive construct of community, ... would stretch from homesteads to townships to seats of central government and on to loose alliances among environmentalists or business leaders, the fragile institutions of international relations, the more robust institutions of global commerce, and even to 'epistemic communities' (Haas 1990) of scientists and others engaged in trying to cope with common pool environmental problems" (McCay and Jentoft 1998: 22).

B. The Task

The scholarly task "... is then to determine, for any given case of apparent abuse of common resources, where the failures lie and what can be done about them [rather than to assume that open access, common property, etc. are the problems]. To do this requires exploring how property rights are understood by various parties and how those meanings are translated into behavior, custom, and law. It requires understanding the nature of conflicts over rights and responsibilities, the roles of science and other forms of expertise and of larger global processes affecting land and natural resource management throughout the world. It also requires understanding, respecting, and building upon the social and political capacities of local communities, but also of the dis-embedding forces of modern society."

CAUSES OF COMMUNITY FAILURE

A. Dis-Embeddedness

Community failure is in part a consequence of what A. Giddens, a sociologist, has identified as 'dis-embeddedness,' the lifting out of locally-embedded socio-cultural frameworks of important functions, like deciding where investments will be made, who will be employed, and how the profits will be distributed. From a resource management perspective, these are also questions about local resource user, government agency, and NGO determination of priorities, allocation of funds, and distribution of information and other benefits.

The less a particular community has control over these kinds of issues, the less likely it can successfully manage its common resources.

B. State and Market

"External forces such as the state and market mechanisms may play a constructive and even crucial role in resource management. We have, however, warned against their more ambiguous impacts where misleading assumptions and models are translated into public policy in a way that produce the very conditions under which the Tragedy occurs. In some cases the state and/or market forces have played a critical role in eroding the capacity of collective action of communities. In other cases the failure may be explained by already prevailing shortcomings at the community level, such as lack of knowledge, dis-organization, social stratification, conflicts of interest, inter-ethnic rivalry and the like" (McCay and Jentoft 1998).

C. Re-Embedding, Through Community-Based Resource Management

"Thus, 'community failure' may be both result and cause of central government initiatives. To what extent the re-embedding of management systems through devolution of regulatory functions to local communities can help to restore these qualities crucial to collective action is an important issue, calling for bold initiatives from communities, government, and other organizations, and thoughtful and critically designed social research" (McCay and Jentoft 1998).

COMMUNITY AND NATURAL RESOURCE MANAGEMENT: RE-EMBEDDING RESPONSIBILITY FOR AND CONTROL OVER THE COMMONS

The Structure of Governance

Cooperative management is about governance, not about management itself. You can have cooperative governance with just about any kind of management regime, ranging from open access to ITQs. It is about the distribution of rights, responsibilities, and power. The overhead outlines some of the typical arrangements. I adopted John Kearney's distinction, in a talk before a meeting in Canada on community-based management: between 'community co-management' and 'corporate co-management'.

There is a range of governance structures, from extremes of government power at one end – where decisions are made by government agencies, with little or no input from or recourse by the citizens – to community or user-group power at the others, where communities or fishermen can

do pretty much as they like. Example of the former would be a government decision to close a shellfish bed because of public health hazards; or to close a fishery or fishing ground on an emergency basis because of evidence that the fish stocks are imperiled. Examples of the latter could include the many informal ways that fishermen regulate their own behavior and that of others – territoriality, taking turns, avoiding waste – and sometimes that is done on a community basis, where it is up to the fishermen of a community to make decisions about, for example, the placement of fishing gear to avoid gear conflicts, or a fair way to allocate rights to lobster territories.

But what we are usually talking about is the big in-between area, because government agencies, with mandates that derive from the public ownership of marine fishery resources, must be involved, but cannot really act without some interaction with people, whether they be politicians and lobbyists or voters and irate citizens. In many countries, particularly since the 200-mile limits of the late 1970s and the development of fisheries agencies, the central focus has been government, but fishermen and others are brought in, in one or another advisory or consultative capacity.

One step, of an imaginary ladder of citizen involvement in fisheries, would be where the government makes up its mind and lets the people know: Government talks, people listen. Included are educational campaigns, warnings about public health risks from eating contaminated seafood, or unilateral actions to close or regulate fisheries for any reason.

A second step – as in various 'consultative management' guidelines and practices – is to consult with representatives of affected industries in meetings that are held around the region or country, by talking with individuals believed representative and by creating advisory groups.

There seem to be two forms of this species of user-participation in resource management:

- In Consult 1, the government asks for advice but doesn't really intend to listen. People quickly catch on to that; it is one of the major reasons people become apathetic about civic involvement.
- In Consult 2, the government asks for advice and intends to listen, if not follow it. This is getting closer to a good balance, but the decisions are still those of government agencies, not the people, and often the decisions are very different from what was recommended.

There is also 'advisory power,' which can look different: the government will create advisory boards or committees that have some greater stature and power. The classic problem with these boards is that the people on them can be in a position of being co-opted (the reverse of 'agency capture') to come to see the world from government eyes, or as troublesome, come to see themselves as window-dressing. The main point is that they have only advisory power. Better than none, but frustratingly not enough in many cases.

Another problem with such boards is that, while those that meet a lot have the advantage of forming a community, and culture, of people with common interests, they can become separated from the communities from which people came, and if not truly representative, or lacking effective means of communication, can lose touch with the community or fishing group represented. But this is a problem with co-management too, or any representative body.

Co-management involves actual sharing of power and responsibility, for at least some matters, between a user-group or resource-dependent community and other groups, usually a government

agency but possibly non-governmental organizations (NGOs) as well. I need not go into the alleged, theoretical, and observed benefits and drawbacks of co-management here, except to note the arguments that active cooperation on the part of resource users in devising and carrying out management is believed to enhance the legitimacy of the rules and their objectives, and hence, one hopes, compliance with them and willingness to remain 'in the game' of continued interaction on behalf of natural resource management. It also may be a way to bring the knowledge and experience of resource users into the decision-making process, and in some political contexts it is valued also on first principles.

REQUIREMENTS FOR SUCCESSFUL CO-MANAGEMENT (3)

A. Representation: Who Should Sit at the Table? Or Send Representatives to the Table?

I distinguish two kinds (following Kearney): community-based and 'corporate.' By corporate is meant that those who are engaged in a truly cooperative relationship of management with a government agency or other group (including NGO), are defined in terms of their industry association, rather than their membership in a broader community. It has become fashionable to talk of 'virtual communities.'

The intent here is to point to the question of whether cooperative management should involve just, or primarily, the harvesters and others directly involved in fishing, or whether it should involve other 'stakeholders' in the communities as well. I imagine that this is a fairly controversial question. It is at the center of key questions in participatory management: Who should sit at the table? Who should have what roles, responsibilities, and decision-making power?

There are arguments both ways, in a general sense, and in a specific sense it is clearly up to the people involved. Among the arguments for an industry-based co-management system is that it's hard enough to get the industry to work together and work with government, and the industry people best know the details of the fishery, markets, past regulatory systems, etc.; and they are most vulnerable to management changes and failures.

Among the arguments for a community-based co-management system is that without broader community support, including the development of strong political constituencies, it may be very difficult to get the government to go ahead with the task of implementing agreements that are reached cooperatively. Another is that in this day and age, there are clearly more stakeholders than just the fishermen, and without the involvement of these others – ranging from fish plant workers to local businesses to environmentalists to fish farmers to recreational boaters – the fishing industry will be increasingly marginalized.

More specifically, if it is industry-based, or corporate, who from the industry should be involved or represented? Vessel-owners? Crew? Dockside workers? Processors and marketers? Fish plant workers? If it is community-based co-management: Where to draw the line around those with legitimate interests in the resource management issue? Should one draw a line?

Throughout the world, the question of broadening representation and involvement to include NGOs – environmentalist and animal right groups (yes, green-peace), socio-economic development groups (OXFAM), sportsfishers associations and general citizens – is rising.

Most generally, the question becomes: How to balance the need to reflect special interest and dependence of some groups (i.e., harvesters, residents in local communities) against need to bring all stakeholders into the process.

B. Boundary Issues

Boundary drawing, both social and geographic, can be important for instilling a sense of 'ownership' and responsibility in people, enhancing local stewardship. Should there be different boundaries for different purposes? Are existing management areas the right ones for community-based co-management? What changes would be appropriate? How to recognize historic uses by outsiders? How to protect the need for mobility and flexibility?

C. Scale and Scope Issues

Tradeoff no. 1: Geographic scale. "Small is (sometimes) beautiful:" small enough for easy monitoring by community members, but large enough to enable comprehensive management of interacting fish populations, migratory stocks, etc.

Tradeoff no. 2: Social scale: Cooperation and consensus-building easier to do with fewer people who already know each other, but important to have full representation and, for some purposes, to cover a large geographical area.

Tradeoff no. 3: Scope: Single-issue or multiple-issue. "Systems work better when they have multiple reasons to work," and there are advantages of issue-linkage for negotiation (I'll give a little on this but then you have to give a little on that) – but they can get bogged down, especially if you have to get agreement for everything (like the Law Of the Sea negotiations). There are also advantages to simpler, focused management bodies; lower transaction costs, including costs of becoming knowledgeable; and clearer goals.

The principle of changing some things so others can remain the same – need to determine and agree on what is really important. What works best at what level.

Critical importance of deciding questions like this within co-management, not by government. That would defeat whole purpose. Government can help, i.e., provide computer models for different proposed scenarios and suggest options not considered.

D. Federal Model: Local All-Stakeholder Co-Management Boards // Coordinating Region-Wide Management Boards (Pinkerton 1994)

- Bring them all into the process, including disruptive parties, if they are indeed local stakeholders with legitimate concerns for the fisheries and fishery-dependent communities.
- Recognize that it will work the best if everyone has more to gain by working together, so may have to make accommodations.
- Government must respect the integrity of the process, vs. those who would try to go around or abort it.
- Parties have to commit themselves to addressing basic problems, i.e. resource sustainability, rather than just their immediate self-interest.

Coordinating higher-level boards: to deal with 'externalities' of local decisions; shared and migratory resources; major policy issues; possibly sticky questions like appeals; data and science.

E. Resources for Management – 'Cost Control and Sharing'

Resources for management and its transaction costs a major question (Pinkerton 1994). Probably need initial assistance from foundation or government (or both), especially to hire coordinator, other startup costs. Self-reliance is one thing, being able to get going is another.

Develop cost-sharing. Allow for 'in-kind' cost-sharing on the part of community groups, not only to help them pay their share but also to provide rewards for otherwise voluntary action.

Volunteer force can be critical. Information gathering; observation, harvest and habitat monitoring (e.g. Water Watch movement). Raising community awareness and support; helping create political constituency for adequate public funding. [Can also be an important way to get youth involved.]

If some kind of 'user fee' approach is used, it may be important to find ways to return some of funds to co-management groups ('dedicated funds').

F. Political Control (Pinkerton 1994: 12-13)

- Local autonomy, to some degree

  'Doing it our way' and development of support, enthusiasm, volunteer energy, and sense of stewardship. Use and development of existing social and political capital: local knowledge, experience, expertise, credibility.

  Checks and balances from region-wide institutions and senior govt. institutions, including government agencies and the courts. But somehow local boards need confidence that their work will not be disrupted by outside forces (conflicting or contested jurisdictions) or dismissed as irrelevant or trivial (i.e. ministerial whim).

- Clear legal definition of local powers

  Co-management depends first and foremost on an agreement on all sides that the co-managing groups will be more-or-less free to 'do it our way,' within guidelines and with agreed upon safeguards. This may require legislation or court rulings.

CONCLUSION: QUESTIONS TO BE ADDRESSED

A. Who Has Authority, Power, Knowledge, and Responsibility, and For What?

B. What Is the Process of Agreeing on, Getting Approval of, Implementing, Enforcing Evaluating Rules and Regulations of the Fishery?

<u>Changes in perspective</u>:

1. The perils of ignoring observations, knowledge, experience of fishing industry – on the one hand (the NFLD case)
2. The perils of ignoring fact of industry influence on science-based assessment and TACs – on the other hand (New Zealand, NFLD case, offshore)
3. Ecosystem-based management: Concern that the science itself is not adequate to the task.

Co-management? For what? Shared responsibilities for data collection. Analysis? Cooperation and communication between fisheries and scientists (CANSEA). How far can and should this go?

C. Allocation: Who Gets How Much of What, on What Basis?

(1) Often difficult political and social issues. Historically, most fisheries management was really this kind of management, deriving from gear conflicts, territorial conflicts. Governments would like to devolve this to industry groups, co-management structures, etc.

(2) Hard to talk about allocation separate from 'conservation' because so many decisions concerning gears, areas, etc. are in effect, and often by intent, allocation questions as well.

Challenges to co-management, community-based management: Dealing with potentially very divisive allocation questions. How can this be done? Need for government agency involvement in making hard decisions (as in appeal process for mobile gear ITQs)? Or can co-managing or community-based groups find ways to do it.

Consensus-building negotiation.

D. How is Data Collected, Analyzed, and Brought Into the Management Process?

E. Important to Discuss Not Only Data Collection (Which Can Be an Aspect of Monitoring) But Also the Analysis of Data, the Design of Research – Science, Proper

This is also not really separable from regulation, because good, appropriate regulation should derive from data analyses (problem definition) and be subject to evaluation based on data. I have elsewhere touched upon the crisis of legitimacy affecting so-called 'scientific' management and growing, if begrudged, recognition of the possibility that fishers have knowledge and wisdom that can contribute to the science of fisheries management.

Definition of data an issue; 'anecdotal data' problem; data and information. This too is not simple.

Data collection: Landings data are crucial; can their accuracy and thoroughness be improved? Will shared responsibility help? Roles of other members of coastal communities?

Can fishermen (and processors) do more? Can scientists find ways to utilize their willingness to try, e.g., for stratified random sampling, or water salinity, temperature sampling? Can experiments on this be expanded and institutionalized through co-management?

Research and data analysis: Should this be monopolized by government scientists? Can 'contestable fisheries research' be developed? Involvement of academic and independent

scientists (the old peer review issue and more). Can there be more collaboration in the analysis and interpretation of data and in the design of research?

At what cost? Self-management by the fishing industry, or even a strong version of co-management, can lead to conflicts of interest in balancing short-term goals to make money against longer-term, more diffuse ecological goals. Participation in data collection and analysis can worsen this, as we know. Can a more community-based co-management system help correct that tendency? How?

F. Monitoring, Control and Enforcement

To what extent does the fact that the state has a monopoly on the use of violence, or the threat of violence, make it the major enforcer? As any enforcement officer will emphasize, no, it does not.

Peer pressure, local, informal sanctions and threats, and the willingness of people to watch each other and act on what they see are critical to compliance as is the extent to which people see that the regulations are sensible and beneficial, and/or believe that they should keep commitments. Hence the argument for more co-management in terms of shared or industry-based (or community-based) monitoring, control, and maybe even enforcement.

This was the original 'dfo' notion of co-management. However, if all co-management means is that people will watch and report on each other – vs. also having a strong say in what the rules are, the sanctions should be, and what the status of the resource is as well as the needs of the community – then it amounts to next to nothing or worse.

It may be helpful to distinguish between monitoring and enforcement. It is one thing to watch and record and another to collect evidence, accuse, try and convict. Industry and communities may be willing and able to do one and not the other.

G. Habitat Protection and Enhancement

Focus on habitat issues may help, at least in the early stages, to get a 'multi-party' system of cooperative management going because this can be less contentious than allocation issues (Pinkerton 1994).

However, this is more so for cases where the habitat problems are mostly caused by 'outside' activities – like oil companies in Alaska, timber, mining, and ranching activities in British Colombia, cities and industries in most of the world. Where the habitat problems are also attributed to fishing activities, as in this region's debate about draggers, then it too may be divisive. Capture fisheries and aquaculture interests can also be divided on habitat questions (even though they may have much more in common than they realize).

Fisheries-based systems of management may be inadequate to the task, as shown throughout the world –-including Japan – where both government fisheries agencies and local communities of fishermen find themselves with no authority or power to deal with problems of pollution, dredging, and other assaults on marine habitats.

This is a good reason to broaden the focus and re-orient it toward coastal zone, watershed, marine ecosystem management, and perhaps to include as stakeholders representatives of activities that are or can be destructive to fisheries habitat.

H. Policy Development and Planning

A typical situation is one where major policy goals are the responsibility of the central government (representing national or regional interests). This provides the framework for more precise and variable policy formulation on the part of particular areas, fisheries, etc. In the cases provided, it is true for every one.

However, at times of crisis, the policy question is up for grabs, and questions of authority, power, legitimacy, and representation arise when assessing which group or interests will be able to see their ideas, values, and visions become official policy.

Locally-based co-management groups can contribute to the process of policy-development (and critical appraisal and change –'evaluation and adjustment'). They can be forums for debate and development of consensus, or strong and well-articulated differences of opinion, about policy.

The involvement of smaller, local groups in policy deliberation may be one of the only ways to make sure that all voices are heard. More informal, consensual meetings may be needed.

Moreover, the constituencies formed through the involvement of more people in the management process can have a very real effect on the politics of policy-making. It's one thing to come up with policy recommendations; it's another to get legislation changed and agencies to implement policy.

I wish to emphasize again the importance of making decisions about what co-management is, the distribution of powers and responsibilities. We must ask this question: Just how far are those in power now willing to go?

The social landscape of our world is increasingly one where local people concerned about natural resources, and the habitats and larger ecosystems upon which they depend, are more or less successfully working together and forming alliances with private property owners as well as scientists, bureaucrats, and representatives of NGOs. The 'commoners' of the past are the 'stakeholders' of the present and future.

Endnotes

(1) See sfaa97.new == ecosystem management.

(2) Our first argument is that 'community' – in the sense of people as social and cultural beings affiliated with each other through kinship, ethnicity, neighborhoods, work, and other ties – is neglected in the Tragedy of the Commons model. This observation is not original nor is it earth-shaking. After all, modeling involves simplification and abstraction. But it is important: By simplifying out the multiple goals, roles, sources of identity and affiliation, and world views within which the so-called 'rational' decision-making of economic actors is embedded, we have also lost all but peripheral vision of the role of social factors and community in how people relate to and deal with their commons.

There are deeper intellectual points to make as well. One is at the core of social theory: A difference between methodological individualists and public choice theorists who tend to see community as the

aggregate outcome of the choices and behaviors of individuals, on the one hand, and the social theorists who emphasize the irreducibility of social experience on the other. From the latter perspective, communities of resource users are not simply composites of individuals. "They often result from deliberate collective action or gain a sense of identity and shared purpose through patterned interactions over time" (McCay and Jentoft 1998: 22). This perspective "... underscores the social and moral aspects of user behavior. Users form communities. Natural resource extraction is guided by social values and norms, many of them 'non-contractual' (Durkheim 1964), some of which stress moderation and prudence" (ibid.), despite temptations to free-ride.

Another intellectual point concerns what is involved in social explanation and the dangers of over-reliance on theories and models (McCay and Vayda 1995; Vayda...) as the source of explanation. The Tragedy of the Commons model may or may not be helpful in explaining particular instances of resource decline and destruction. What does a theory of open access, free riders, and social dilemmas have to offer to attempts to account for rapid destruction of tropical rain forests? Perhaps a lot, perhaps little, compared with a more detailed appreciation of who the actors are, why they have the access they do, how they are organized, and what the incentives are for their activities? (Rudel, etc.). This question also takes us back to the first, the division between public choice theorists and those who see rational decision-makers as embedded in and constitutive of larger social realities. It does so by begging the question, in a way: The question becomes, what has happened here? who was involved? why? Vayda's method of progressive contextualization may lead us quite a distance away from the Tragedy of the (Open Access) Commons model's claim to explaining environmental calamities. It may not; it depends on the specifics. Jumping to conclusions, i.e., that open access or even common property may be the problem, is not really a good idea.

(3) Based heavily on Pinkerton (1994).

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