## **Community Governance of Common Property Resources**

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The focus of this session is on local-level institutional arrangements to promote sustainable governance (which I take, following Jonathan Wiener's essay on that topic, to mean the kind of governance that treats sustainable development as a goal and works to produce it). But before I zero in on purely local questions, I need to explain that I regard local arrangements simply as part of an accumulation of local improvements everywhere that are supposed to yield global improvement, and thus as a necessary step toward nations' acquiring the internal capacity to deliver on international environmental commitments. The function of environmentally healthy local arrangements isn't just to produce local environmental improvements, but also to enable governments to make reciprocal trades and credible promises at the international level that they can be expected to keep. Environmental problems have the same effect on porosity of sovereignty that increasing international trade and capital flows have on the interests of nations in each other's internal business. How a nation treats its environment becomes an issue of concern in other nations, just as how it treats its workers, or whether its products malfunction, or whether it enforces copyright laws, or whether it protects bank deposits and regulates insider trading. Similarly, the fact that multinational corporations, subject to regulation by multiple governments or perhaps by none, are often the entities that employ the workers, adopt copyrighted technologies, use environmental resources, or generate environmental damage, creates an additional layer of complexity and confusion in figuring out how to design institutions from local to global that will give us planetary environmental health.

### The Relationship between Local and Global Institutions

Because of this concern of mine for local institutions as building blocks of something larger, I see local environmental improvements<sup>a</sup> as falling into three different groups, illustrated in Table 1.

a. Which environmental problems one ought to worry about, what degree of protection to work for, and whose definitions and priorities one uses (those of rich people or poor ones?) are very important questions I will simply sidestep here. I am assuming here that preventing air, water, and soil pollution is important to human welfare everywhere, although there are certainly degrees of prevention and cleanup that we could argue about. I am also going to go ahead and assume here that minimizing the amount of catastrophic climate change we have to go through is globally desirable, and that preserving as much biodiversity as we can is also globally desirable, but that those who can afford the short-term sacrifices involved and are willing to make them may have to pay the difference to bring these achievements about in places that cannot afford on their own to help much or that claim, credibly, not to be especially interested in these achievements. I will leave it to others to try to make finer distinctions among different global environmental goals if we end up having to prioritize them and settle on only the most important ones.

(1) Where an environmental problem produces local environmental harm, local needs and priorities should (all other things being equal) cumulate to produce a local solution that makes an appropriate contribution to the global solution (first row of table). In this case, improved design of local institutions, along the lines indicated in the third column of the table, may be enough to stimulate amelioration. Local efforts to address deforestation, motivated entirely out of a wish to avoid the damaging local consequences to watersheds and agricultural production, will also generate additional carbon-sequestering capacity to deal with global climate change.

(2) Where the environmental harm is both local and global, and local needs are satisfied by efforts that address only the local problem, additional persuasion in the form of "enabling" or "persuasion" side payments will be needed to produce the additional amount of effort needed to contribute to solving the global problem. Many less-than-rich countries (both developing nations and the post-communist industrial nations) may be interested in controlling carbon emissions for the purpose of reducing local air pollution damage to human health and labor productivity, but may find that the amount of carbon reduction that would otherwise be assigned to them in a global program to combat climate change is more than that. Richer countries will need to make "enabling" side payments to these countries to improve their technologies for fuel-buming and emissions control. Similarly, "persuasion" side payments to produce additional increments of effort are also needed in the case of environmental problems whose impact is worldwide but whose generation or potential for repair are geographically concentrated. Some nations may care intensely about a problem but have little or even no internal capacity whatever to contribute to solving it and must "buy" contributions from others. Canada and Sweden have no internal capacity to protect tropical biodiversity habitat (though they may be able to make some contributions of their own to solutions through domestic enforcement of CITES prohibitions on imports of endangered species). But they might be able to make "persuasion" side payments to nations with tropical biodiversity to conserve, so that the latter will protect more than they might otherwise have chosen to protect.

(3) Finally, where local choices might actually work against global environmental solutions, the "persuasion" side payments that others would have to make would have to be quite substantial to alter those choices. To persuade land-pressed Madagascar to protect its unique biodiversity resources, fairly large transfer payments would be needed to alter the protection vs development tradeoff that Madagascar might choose on its own. Nations with particularly precious environmental resources that would suffer no locally concentrated damage from harming them are in a good position to drive a hard bargain for these substantial payments. This is most likely to be the case with biodiversity hotspots, where the losses due to a failure to protect will affect future generations around the planet in ways we cannot now know, but no concentrated harm in those hotspots. (One might have been tempted a few years ago to classify many of China's environmental choices in this category, but China is large enough, and its population now rich enough, so that China is less and less likely to make the environmentally damaging choices that it might have made a few years ago when its people were poorer and had a different preference structure. The internal emergence of a growing environmental activism in China may well move China to a very different spot in the bargaining space on international environmental issues.)

A building block and prerequisite for dealing with all three of these situations is the best possible local (within-nation) institutional arrangements. Nobody has these yet — nobody has all externalities and environmentally-destructive rent-seeking completely licked. Even where almost all things have been propertyized, debates about whether the assignment of rights is the best one continue in the form of controversy over the legitimacy of government regulation, "takings" of development rights, and so on. Even where there is considerable freedom of information and both government activity and much scientific knowledge are matters of public record, environmentally damaging rent-seeking continues. So the lessons we have learned about ways to do better remain usable everywhere. But some countries are much worse off than others in the degree to which they have applied what we know about desirable

institutional arrangements. (Indeed, the existence of these cases helps us figure out what's better and what's worse!)

Ouite an assortment of local institutions are important in making it possible for people who want environmentally sound practices to get them. A number of pure public goods that are often in short supply in developing countries are vital here. Information that is of high quality (reliable and useful) and freely available helps people decide whether they should worry about the environmental degradation they see and also helps them learn about methods available to tackle the problems they identify as being worthy of their concern. Freedom to mobilize without fear of persecution when they see a problem is no guarantee of collective action but it certainly reduces the cost significantly. Relative transparency in decisionmaking is critical so that people can track the sweetheart rent-seeking deals that can result in destruction of resources. Smoothly functioning markets in which prices communicate reliable information are vital, as are the creation and acknowledgement of clear, specific, and secure property rights in just about everything, including environmental resources. Finally, after assigning property rights governments must defend them with adequate machinery for enforcement and resolution of disputes. Perhaps no economy or government generates "enough" of these pure public goods, but those of many developing and postcommunist societies generate very few indeed, illustrating for us how critical these goods -- information, freedom of speech and assembly, transparency, well-behaved markets, clear assignment of property rights, and backup arrangements for enforcement and adjudication of disputes — are for any kind of decent performance, economic or political. None of these items can separately contribute much to good performance without the others, and environmental regulation in the absence of these items is probably worse than worthless. The remainder of my remarks focus on the creation of one of these goods, robust property rights in natural resources, which has been the focus of my own work.

## Community Resource Rights and Resource Governance

Nobody argues about what the sensible allocation of property rights is for toothbrushes individuals should have clear and very exclusive rights to them, even in communist societies. Rut there is enormous debate about the appropriate property rights arrangements for natural resources, some of it ideological in origin and some of it based on conflicting readings of the human experience with different kinds of property rights. For many years an emerging consensus was that when individuals share ownership of resources with others, they are prone to overuse those resources (Gordon, Scott, Demsetz, Alchian and Demsetz, Garrett Hardin), so natural resources should be owned either by individuals just the way everything else should be (said the classical liberals and economic conservatives), or by governments (said Garrett Hardin and those with socialist leanings). These views have been now been challenged on both logical grounds (those who advocate individuals) and empirical grounds (there are many instances of shared resource ownership that have not resulted in overuse of resources). The newly exploding field of research on common pool resources and common property regimes to manage them has learned much about how shared rights can be designed so as to overcome internal free-rider problems that critics of shared resource use were so worried about. A summary of the major findings from this work follows:

(1) The "tragedy of the commons" results not from the sharing of rights, but the absence of rights. Creating property rights in resources is a necessary (not sufficient) condition for giving someone a reason to invest in the quality of those resources and protect them. Classic individual ownership of segment parcels of a resource is either physically impossible or politically unthinkable in many circumstances, and even where it is physically possible would leave many environmental externalities as externalities, harms that activity on one parcel can do to another.

(2) For ecological reasons - that is, to internalize environmental externalities — managment and use of an environmental resource must be coordinated over large numbers of people, and a property rights arrangement that acknowledges this reality as inevitable will need to vest some sorts of rights in

collectivities of people, preferably the collectivities of the size that need to do the most coordinating work - e.g., collectivities that internalize the most offensive externalities (McKean 1996). For huge resource systems this will involve layered or nested federations (Ostrom 1990).

(3) Environmental well-being and many other good things depend on having higher layers of government defend these property rights when they come under attack, which also means that governments have to be willing to acknowledge these arrangements or they will eventually fail.

(4) Although these enforcement structures and backup mechanisms for dispute resolution are crucial, we also know that community governance of resources actually requires less in terms of state enforcement infrastructure than individual ownership, because the community itself can (and wants to) take on some of the enforcement work itself. The policing that the community does to prevent cheating and free-riderism on the intra-community cooperative pact to restrain its total use of the resource can do double duty, if there is government support lurking beyond, in enforcing restrictions on access by outsiders as well. This means that community governance of resources can be the preferred option in poor societies even on resources on which parcelling is physically, politically, and ecologically acceptable, because it combines multiple enforcement chores efficiently.

(5) When governments vest resource rights in persons other than those who live near the resource, governments create a terrible principal-agent problem. The resource rights-holders are absent, the local resource neighbors have no rights, so the local resource neighbors have no incentive to protect and every incentive to poach on the resource before the absent rights-holders take it. This, by the way, is the situation we usually get on nationalized resources where governments award extraction rights to absentee subcontractors, and then use the results this generates — resource poaching by locals — as evidence that locals cannot manage their resources wisely and as justification for the subcontracting scheme.

(6) Instead, when governments vest ultimate resource rights in persons most likely to suffer from the misuse of those resources, these people have a greater incentive than anyone else would to use those rights in such a way as to prevent environmental damage.<sup>15</sup> By this criterion, the best owners of a forest, or certainly the best owners of use rights to a forest, are the people who live immediately downhill from it. The best owners of a water system are those who drink that water and irrigate their fields with it. The best owners of a fishery are those who would profit from its continued existence. Such rights can also improve the behavior of non-owners, if they must pay compensation to owners of resource rights that they harm,<sup>0</sup> because that obligation gives them an incentive to do less harm.<sup>d</sup>

b. Naturally, having a greater incentive to protect a resource than anyone else has docs not mean that this amount is enough to guarantee protection. A community might well make decisions similar to those that individual property owners sometimes make — to destroy a resource or to change its character entirely, to sell it off to pay a debt, or to mine it to exhaustion with plans to turn to other sources of income afterward.

c. Japanese fishing cooperatives own fishing rights [gyogyoken] to their fisheries. Land-based polluters must compensate them if pollution damages the fishery, and developers and municipalities that want to create cement-lined harbors and breakwaters must buy the fishing rights they threaten as an up-front development cost. Fishing rights are valuable enough in some areas to have caused developers to cancel their plans.

d. Coase argued against the preassignment of liability in a zero-transactions cost world, and free market environmentalists therefore may prefer not to obligate causers of harm in advance to pay compensation to the harmed. His examples included the dentist who loses business when his patients must endure factory noise next door, and the farmer whose cows and corn arc burnt by sparks from the locomotives that go by on railway tracks adjacent to their fields. In these cases, the dentist and the farmer know exactly who caused their problem, and the problem-causer cannot make a credible case for an alternative view. However, Coase acknowledged that in the real world transactions costs can be quite high. For multiple victims of environmental degradation to decide that they have a problem, to trace its causes to an origin, and then to prove this in court in order to extract civil damages as compensation, adds up to pretty spectacular transactions costs, quite unlike those faced by the dentist or the farmer

(7) We know a lot about internal design guidelines that successful communities have used to patrol free-riders and cheaters and foster cooperation (see Ostrom 1990, McKean 1992, Bromley 1992) (see Table 2 for an itemized list). Among these, rules that cap aggregate use of the resource and heavy investments by the group in monitoring and enforcement to catch violators of those rules are probably the most important (Agrawal, 1998). It is probably best for communities to have this information about rules and techniques that have worked elsewhere as a set of guidelines rather than attempting to imitate an existing template. Considerable case-by-case adjustment in response to ecological change and external economic opportunities for community members will always be required anyway.

(8) Although it certainly helps to graft resource management rights onto pre-existing organizations because they already have experience working together and dealing with internal conflict, we also know that newly created organizations can be the foundation for cooperative practice too.

# New Questions for Community Resource Governance

What we know most about is the internal design of systems that successfully maintain resource productivity over a long period of time. But to make practical use of these design criteria we need to know much more than we do now, particularly about the economic context surrounding the resource system in question.

(1) Where and when would creating community-managed resource systems be more sensible than creating individual proprietorship of resources when the latter is also physically possible? (See McKean, 2000.) How do we diagnose the political and ecological circumstances in which the latter is unwise or unworkable? Can we determine in advance where failure (to achieve resource sustainability through communal management) is a foregone conclusion, or where community management is simply inappropriate or unnecessary anyway?

(2) How does commercial demand for resources taken from community-managed systems affect the dynamics of internal cooperation? The evidence here is quite mixed, hence the confusion. Management only becomes necessary for resources that become scarce, and resources become scarce only in the face of demand. Commercial demand creates the possibility that demand in a particular locality will go well beyond local needs, but as long as that demand is not temporary or whimsical, it will increase the rewards from sustainable use as well. However, as long as multiple sources of the same product compete with each other, it may be difficult to orchestrate restraint in harvesting from one resource-dependent community to the next — this dilemma leads many to contemplate the notion of natural resource cartels to make sure that renewable resources get renewed rather than mined to exhaustion. Many communally managed resources are managed for commercial extraction and are not worth extracting at all except for peculiar customers who pay cash.<sup>c</sup> Yet at the same time, it appears that commercial demand in the company of rapidly rising prices for the resources in question can exacerbate the temptation to harvest more now, to capture high prices, and solve problems of overexploitation of resources later. Historically,

in Coase's examples. Coase himself would almost certainly argue that where damage transmitted through and to the environment is concerned, pre-assignment of liability in the interest of prevention might be the socially efficient option after all.

e. Chicle latex extracted from the Maya biosphere reserve and used for chewing gum could not possibly be used by locals in quantities that might threaten the supply, not even if they chewed gum 24 hours a day. Its value as a resource comes almost entirely from the commercial demand for it abroad, which alone has created the incentive for devising communal management institutions. These institutions are now under threat after having worked well for more than half a century, but it the threat seems to come from the challenge to the property rights of the original extractors rather than from commercial demand per se (Dugelby). Other resources for which subsistence uses are minor and where commercial uses are the ones that have actually stimulated the emergence of communal management include birds' nests (for use in Chinese cooking) in Kalimantan (Jessup and Peluso) and gum acacia in Senegal (Freudenberger).

many robust systems of collective management began to falter as commercial demand for the products of the commons increased, though we do not know for sure if the responsible factor here was demand per se that was a problem, or changing property rights arrangements that threatened the security of communal tenure, or still some other problem.

(3) How do livelihood opportunities outside the community affect the ability of a community to reach agreement on details of resource management, keep internal conflict at manageable levels, and agree on long-term sustainability as an overall goal? The evidence makes it quite clear that homogeneous communities where most people have the same array of livelihood options and do not plan to leave the community have the best chance of agreeing on goals and methods for resource management. Economic change that multiplies the options people have also multiplies the alternative uses for the commons, and creates greater possibility both for disagreement on goals and over the time horizons by which to measure sustainability. Communities that see great out-migration to the city or see urban development creeping toward them, for instance, become vulnerable to irreconcilable disagreements in planning the use of their own resources. But, again, most of the evidence comes from societies that were also undergoing social change that weakened property rights as well. So it is difficult to be sure about the causal implications here. It may yet be possible and desirable to establish common property regimes in circumstances of economic change if we can identify the ecological and economic situations in which communal management is more efficient than parcelled management and if we can assure that property rights in the commons are as well protected as other kinds of property rights in society. If common property regimes are in fact an efficient way of coordinating on externalities, as I believe they are (McKean, 1999, 2000), then we should find that we need more of them, not less of them, in future, and in particular that we need them where populations arc dense, not sparse.

#### Community environmental management as social capital

It is reasonable to think of the local user groups that manage resources collectively as social capital for their society as a whole, making important contributions to the quality of information about the resource, to improved behavior of markets in the products that are extracted from resource commonses, to greater mobilization and political access for direct users of the resources (often the poorest members of a poor society), and finally to greater cohesion and social order of the bottom-up variety. In view of the fact that poor economies tend also to have badly fragmented societies, low political capacity, high political corruption and considerable economic loss as a result, community resource management may offer benefits to civil society quite apart from their contribution to sound resource management and environmental protection. The only losers in this evolution would be the current extractors of resource rents that impose deadweight losses on everybody else. Although they resist sharing their gains and being politically displaced, this is slowly happening in many places.

Thus the story of environmental improvement quickly becomes entangled with demands for political change and increasing local democracy, and, sure enough, much of the philosophical writing about how we can design environmentally sensitive polities does end up preaching about small-scale Jeffersonian democracy (Dryzek, Ophuls, Wenz, and many more). I have always felt that the flaw in these prescriptions was in not allowing for connections among communities to deal with environmental problems that are much bigger than single communities, and for not recognizing that some problems have to be managed at the global level. Most of these remedies envision small-scale democracy and local resource control as a way of preventing environmental problems entirely so that global environmental problems evaporate and global environmental governance becomes moot. They completely neglect the possibility that different communities. In contrast, I regard inter-community and inter-national externalities as virtually inevitable, making larger-scale and global environmental governance tasks that will be with us forever. The key is in the combination: insofar as small (community-level) democracies

can be confederated into larger ones that internalize more externalities, resolve conflicts among member communities, and speak for more people, sound local resource governance becomes not the rival but the foundation for sustainable global governance.

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