Local Action, Bioregional Politics, and Transnational Collaborative Networks in Policy Responses to Global Environmental Change

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Ronnie D. Lipschutz

People who want property want to be left alone to acquire and enjoy it. They want to be able to do what they please with it--to consume it, transform it, exchange it, give it away, put it to good use, or just hold it. How much property people want, what sorts they want, and how much they are willing to let these desires be frustrated in order to achieve other goals vary widely. But a social order must coordinate varying desires if it is to be stable, and the price of stability must be morally justifiable if the social order itself is to be justifiable. The more crowded the planet grows, and the scarcer its resources become, the more difficult this is.

--Lawrence Becker--[1]

What is the good of a house if you don't have a tolerable planet to put it on?

--Henry David Thoreau--[2]

We will reclaim the wilderness, secede from the nation, and live as sustainable bioregions.

--Ecotopia E(arth) F(irst)!--[3]

I. Introduction

In September 1991, representatives of ten California and federal resource agencies, frustrated by a legislative impasse over protection of old-growth forests and other resources, signed a Memorandum of Understanding with the heading "California's Coordinated Regional Strategy to Conserve Biological Diversity." The Preamble to the agreement read in part:

> California is one of the most biologically diverse areas in the world.... Californians now recognize the need...to protect and manage ecosystems, biological communities, and landscapes.... To effectively conserve California's biological resources and maintain social and economic viability, public agencies and private groups must coordinate resource management and environmental protection activities, emphasizing regional solutions to regional issues and needs (MOU, p. 1).

Under the heading of "Strategic Principles," the Memorandum proposed that:

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[1] Lawrence C. Becker, Property Rights--Philosophic Foundations, London: Routledge & Kegan Paul, 1977, p. 1.

[2] According to David Brower, quoted in John McPhee, Encounters with the Archdruid (New York: Farrar, Strauss & Giroux, 1971).

[3] "Redwood Summer II: Ecotopia Summer," Earth First! 11, #6 (June 21, 1991): 1.

1. *Goals and strategies will be defined at the level of a bioregion.*

2. *Institutions and their policies must adapt to reflect a bioregional approach to the protection of natural diversity.*

Bioregional California did not emerge *ex nihilo*; it was a consequence of several years of intense social conflict over resource management throughout the state.

One year earlier, under the banner of "Redwood Summer," environmental activists sought to celebrate and protect what remained of California's dwindling old-growth redwood stands. In doing this, they were trying to change the very constitutive basis of the relationship between trees and people, by defining a political space wherein would apply new types of property-rights relationships--in essence, to declare a civil rights of trees. At the same time, environmentalists less oriented toward direct action and symbolic politics were also active: they pushed a state referendum to protect what little remained of California's old-growth forests, lobbied Congress and the National Wildlife Service to declare the Northern Spotted Owl an endangered species (a step that would have the effect of preserving old growth stands), negotiated with local lumber companies, and even suggested "debt-for-nature" swaps--a first for the United States. Ultimately, the struggle over California's forests moved into the legislative arena, where successive bills were debated and defeated by a coalition of strange bedfellows for whom what was being proposed was either too much or not enough. The Memorandum signed in September 1991 was, in part, an acknowledgement that institutionalized politics would no longer suffice to deal with such issues; that some new approach would be necessary.

What are we to make of such an effort? Until now, bioregions have been seen as an idealistic, and somewhat idyllic, but largely impractical approach to environmental protection and biological conservation.[4] But the California process appears to make "real" what was formerly only imagined. Moreover, the chain of events running from Redwood Summer (actually, from efforts beginning in the early 1980s) to Bioregional California is symptomatic, as well as symbolic, of an increasingly common transformative process in modern society that is altering the nature of political transactions and activity.[5] I believe that this process has not only regional and national implications and consequences, in terms of environmental management, but international ones, as well. The participants in Redwood Summer were engaged in an effort to change the very basis of the relationship between trees and people,

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[4] Indeed, I have critiqued the notion of bioregion as being problematic on a number of different grounds; see Ronnie D. Lipschutz, "Wasn't the Future Wonderful? Resources, Environment, and the Emerging Myth of Global Sustainable Development," Colorado Journal of International Environmental Law and Policy 2, #1 (Winter 1991):35-54.

[5] This is a theme found in the recent literature, empirical and speculative, on the growth of the "new social movements," but it is also found in work on international political economy and international society. See, for example, David Held, "The State: Between the Local and Global," Paper prepared for the International Conference on "Changing World Order and the United Nations System," Yokohama, March 24-27, 1992; and Stephen Gill, Robert Cox, and Kees Van Der Pijl, "Structural Change and Globalising Elites: Political Economy Perspectives in the Emerging World Order, Paper prepared for the International Conference on "Changing World Order and the United Nations System," Yokohama, March 24-27, 1992.

between nature and society, by redefining the *constitutive* rule structure of the "resource management regime" put in place so many years before, during the Progressive Era, by state and federal governments, corporations. If successful in this effort, Redwood Summer would have led to the creation of a new social choice structure, within which would apply new types of property right relationships that would alter the nature and locus of control of the forest resource.[6]

The focus of Redwood Summer was not, however, merely local. At the same time, participants in Redwood Summer made a conscious effort to generalize the legitimacy of these new constitutive rules into the global arena--even if only symbolically--in an effort to extend the principles of Redwood Summer into the realm of international politics. Bioregional California appears as one further step in this process. Although it has hardly been anticipated by the signatories to the agreement, it could well be that a bioregional approach to resource conservation will be adopted elsewhere, first by other states and, eventually, in other countries.[7]

Bioregionalism is important for another reason, as well. It begins to institutionalize the local and regional management of resources and argues for a different lens through which to look at the more general problem of global environmental change. Indeed, in the longer run, bioregionalism could even alter the relationship between *international environmental regimes* and the users of resources and, in so doing, change the way we understand global environmental problems. This is, of course, still speculative: the process has been underway in California for less than a year. But in many other places, local efforts to educate, manage, and coordinate around environmental protection and resource conservation are of growing importance and significance. As I argue in this paper, there are functional as well as analytical reasons for this.

The purpose of this paper is to look more closely at three sets of related questions. First, what exactly is the nature of the complex linkages between sociosphere and biosphere and how do these relate to the ways in which we usually "construct" our understandings of the global environment.[8] Second, how might we go think about the architecture of a *sustainable* social choice mechanism that addresses the problems raised by the complex linkages. And, third, are there any examples of such praxis to which we might turn for

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[6] In other words, this was an effort to change "ground rules," and not just regulative ones; on this, see John G. Ruggie, "International Structure and International Transformation: Space, Time, and Method," pp. 21-35, In: E.O. Czempiel & J.N. Rosenau, eds., Global Changes and Theoretical Challenges, Lexington, Mass.: Lexington Books, 1989, note 6, p. 33.

[7] According to those who have been closely following this process, California Governor Pete Wilson is reported to have told other governors that bioregions represent a promising approach to resource management. See also: Matthew Wald, "9 States in East Plan Strict Limits on Car Pollution," New York Times, Oct. 30, 1991, p. A1 (nat'l ed). Such "leadership" cuts both ways, of course; see also Katherine Bishop, "Foes of Execution Fear California May Set Tone," New York Times, April 21, 1992, p. A7 (nat'l ed.).

[8] The terms "sociosphere" and "biosphere" are commonly used to distinguish between natural systems and those embedded in human society. See "Reconciling the Sociosphere and the Biosphere--Global change, industrial metabolism, sustainable development, vulnerability," special issue of International Social Science Journal 121 (August 1989). The term "social choice mechanism" comes from John S. Dryzek, Rational Ecology--Environment and Political Economy, Oxford: Basil Blackwell, 1987.

insights?[9] In what follows, I shall argue that the literature as well as a growing body of empirical data provide strong reasons to think that emerging networks, linking local practices to national governments and international regimes, may be an important strategy for coping with global environmental change. This is a conclusion that goes somewhat against the grain of much of the literature and activity currently underway around the issue of global environmental change,[10] but is very much in line with the bioregional strategy described above.

II. What is the problem?: The complexities of global action

Global environmental change[11] is an emerging problem of worldwide scope and great complexity that will challenge conventional concepts of national sovereignty and ordinary methods of dealing with transnational issues. Environmental degradation takes place within individual countries, caused by a vast number of individual and collective activities, yet the effects of global environmental change will be felt by all countries--even those whose contribution to the problem is minimal. Most, if not all, countries will have to take actions necessary to ameliorate the effects of change, or to adapt to them, without any guarantees that any will benefit from the results. Moreover, efforts to establish collective international schemes for dealing with global environmental change will, inevitably, come into conflict with the sovereign desires and goals of individual countries.[12]

Thus, unprecedented cooperation among countries at the international level is presumed to be a *sine qua non* for the successful control or amelioration of global environmental change. Less widely recognized, but perhaps as important, this will also require greater coordination and organization--and, possibly, the sharing of power and authority--between governments and the constituent cultures and societies of these individual countries.[13] This latter requirement, in itself, will create new problems, for there are likely

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[9] For an excellent analysis of some aspects of these questions, see Ronald J. Herring, "Resurrecting the Commons--Collective action and ecology," Items (SSRC) 44, #4 (Dec. 1990):64-68.

[10] As argued by, among others, Richard Benedick, Ozone Diplomacy, Cambridge, Mass.: Harvard University Press, 1991.

[11] I use the term "global environmental change" here to refer to that set of alterations in environmental resources arising from externalities produced by industrialization and economic growth, as well as those resulting from poverty and overuse of subsistence resources. See, e.g., William C. Clark, "The human ecology of global change," International Social Science Journal 121 (August 1989):315-46. In using the general term "environmental problems" later in this proposal, I gloss over the vast differences among those that are commonly placed in this category. Global climate change and soil erosion, although both fitting under the umbrella, have very different technical, social, and political characteristics, and they are connected to the "world system" in different ways. This is a point that, to my knowledge, has not been explored in depth, although a recent effort in this direction is Mary E. Clark, Ariadne's Thread--The Search for New Modes of Thinking, New York: St. Martin's Press, 1989.

[12] This is a version of the classical problem of collective action in anarchy; see, for example, Mancur Olson, The Logic of Collective Action, Cambridge, Mass.: Harvard University Press, 1971.

[13] Cultural differences as an obstacle to international agreements are a problem that has not been given much consideration by analysts of international agreements. Some evidence of the potential scope of this problem is provided by a study published in New Delhi by the Centre for Science and Environment, charging the World Resources Institute with "environmental colonialism" in its calculations of countries' relative contributions of greenhouse gases to the atmosphere. See "UN Sponsored Study Said to Reflect

to be serious "discontinuities" between the legal and economic designs developed by national authorities attempting to implement the agreements they have signed, and the intricate networks of social relations that embrace the cultures affected.[14] Ultimately, the formulators and implementors of international agreements will have to find the appropriate mix of regulations, incentives, and sanctions that will not only encourage national managers to behave in particular ways, but also induce them to construct bridges that will persuade individuals and societies on the ground to respond in ways conducive to environmental protection or restoration.[15] We will also find it necessary to think in terms of much more complex systems of social and other relations. As Richard Norgaard has noted:

> While institutions will have to be locally tailored to support ecosystem-specific technologies, local institutions, nonetheless, will still have to mesh with regional and /global institutions designed to capture the gains of ecosystem management on a larger scale and to prevent untoward broader consequences of local decisions.[16]

This process is one whose magnitude can only be guessed at the present time. To begin, however, we need to think about the relationship between human societies and the environment.

Global Change & Social Complexity

Global environmental change is commonly viewed in terms of its most publicized manifestation, global warming.[17] But global warming is a secondary consequence of a variety of localized human activities that also result in other forms of environmental degradation as well.[18] Moreover, the ways in which we conceptualize these problems has a great deal of influence on how we try to address them. "Social complexity"--a term intended to capture the intricate webs of social and productive relations within human societies and among them--is relevant here since relationships between local causes and global effects are largely the result of coupling between particular economic and political arrangements at the local, national, and global levels, and local ecosystems tied to them through complex,

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'Environmental Colonialism'," International Documents Review, 18 March 1991, p. 6.

[14] The "web of social relations" is a particular characteristic of states that have not evolved under the Western legal traditions, and continue to be characterized by a broad variety of institutions based in local cultures. See Joel S. Migdal, Strong Societies and Weak States--State-Society Relations and State Capabilities in the Third World, Princeton: Princeton University Press, 1988, pp. 33-38. We can expect such "discontinuities" to show up in industrialized countries, as well, evidenced in a growing resistance to established patterns of resource management.

[15] This problem can be thought of as a more complex version of the "two-level game" discussed by Robert Putnam, "Diplomacy and domestic politics: The logic of two-level games," International Organization 42, #3 (Summer 1988):427-60.

[16] Richard B. Norgaard, "Sustainable Development: A Co-Evolutionary View," Futures (Dec. 1988): 609.

[17] See, e.g., German Bundestag, ed., Protecting the Earth's Atmosphere--An International Challenge, Bonn: Deutscher Bundestag, 1989; John Firor, The Changing Atmosphere--A Global Challenge, New Haven: Yale University Press, 1990.

[18] See Clark, op cit.

transnational networks of exploitation, transaction, and exchange, and vice versa.

We can see this complexity in two ways. First, there is the issue of multiple effects, which play themselves out in diverse ways. For example, deforestation, even in temperate regions of the world, not only emits carbon dioxide into the atmosphere, it can also contribute to soil erosion, water pollution, and loss of habitat and biodiversity;[19] each of these has different social consequences that depend on the histories and structures of affected groups. Second, there are complex connections among environmental problems themselves, mediated not only through physical systems but through social ones, too. Globally-linked biogeophysical systems can, of course, aggregate the effects of local sources of pollutants, in the way that the consequences of an increase in atmospheric carbon dioxide, coming from a multitude of fossil fuel-burning systems, may be redistributed in ways that will vary dramatically with locale; this is a connection that is widely recognized. But there are other linkages of comparable importance. For example, when viewed in narrowly physical terms, soil erosion can be seen as a *local* phenomenon occurring simultaneously in many places across the planet. But such local physical changes may be linked to each other through various global networks, both in terms of causes (e.g., global market pressures) and consequences (e.g., global food productivity and distribution).[20] And species extinction is, in part, a side-effect of the destruction of ecosystems, many of which are exploited under pressure from global systems as well as national and local ones.[21]

The analytical and policy literatures do not often pursue these latter notions of social complexity, even though they are, in some sense, prior to the negotiation of international agreements.[22] This is understandable: The complexity of these sociospheric and biospheric connections often produces a confusion of causes, consequences, and linkages. More importantly, the complex linking of local and global means that some of the most important causes and consequences of global change--the sum of a myriad of individual human choices and actions, and the cumulative effects on a myriad of human lives--are inevitably distributed in an uneven fashion over a large number of nation-states, cultures, and societies, all of which complicates problem-solving. But the very real existence of complex social linkages underlines a fundamental problem in thinking about approaches to global environmental

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[19] Robert Repetto, "Deforestation in the Tropics," Scientific American 262, #4 (April 1990):36-42.

[20] This point is one that has long been recognized in anthropology, geography, and rural sociology; see, e.g., Piers Blakie, The Political Economy of Soil Erosion, London: Longman, 1985.

[21] These systems are generally thought to be economic, although as Brazil's efforts to construct the Calha Norte, or "Northern Trench," in Amazonia demonstrate, the systems can be strategic, as well. See João Pacheco de Oliveira Filho, "Frontier Security and the New Indigenism: Nature and Origins of the Calha Norte Project," pp. 155-78, in: David Goodman & Anthony Hall, The Future of Amazonia--Destruction or Sustainable Development? New York: St. Martin's Press, 1990. See also E.O Wilson, ed. Biodiversity. Washington, D.C.: National Academy Press, 1988.

[22] Indeed, it seems safe to say that the "social construction" of global change is such as to avoid such complexity. While no one denies that the array of linkages is complicated, problems are generally cast in rather simple cause-effect terms. See Ronnie D. Lipschutz, "The Social Construction of the Global Environment," article in progress; see also Paul C. Stern, Oran Young & Daniel Druckman, eds., Global Environmental Change--Understanding the Human Dimensions, Washington, D.C.: National Academy Press, 1992.

protection: where and how are we to draw boundaries for managing resources so as to facilitate such protection. We take it for granted that ecosystemic boundaries have little correspondence with political, economic and social institutions at the international level; indeed, this is one reason why international cooperation is seen as being so critical if global environmental problems are to be addressed. But it is not really clear that the control of causes or amelioration of consequences can be accomplished on the basis of the conventional tools of international diplomacy and collective action; indeed, these tools could stand as obstacles.

III. The state & protection of the global environment: Competent or incapable?

The exercise of formulating and implementing conservation strategies is particularly difficult where "global" environmental problems subject to international negotiation are concerned.[23] Most analyses of large-scale environmental degradation take as their primary focus the role of the nation-state in addressing and ameliorating the problem.[24] The argument is, by now, a familiar one: because so many of these problems are transnational in nature, they can only be dealt with at the international level. Moreover, the logic of the "tragedy of the commons"--that a shared resource lacking controls on access and usage will inevitably be degraded--requires that states accept regulation--in Garrett Hardin's words, "mutual coercion mutually agreed upon"[25]--which mandates, first, collective action and, second, the yielding up of a certain degree of sovereignty in the name of the global good.[26] Although this has proven to be a difficult task, it is not an impossible one. The various agreements having to do with protection of the stratospheric ozone layer are pointed to as the model for such agreements, including as they do, most of the countries of the world and making provisions for the transfer of technology and resources to Third World countries that might otherwise find themselves at an economic and technical disadvantage.[27]

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[23] I omit here any discussion of the "collective action" problem in its more classical sense. See Olson, op. cit.; Russell Hardin, Collective Action, Baltimore: Johns Hopkins University Press, 1982. A discussion of its application to global climate change can be found in Ronnie D. Lipschutz, "Bargaining Among Nations: Culture, History, and Perceptions in Regime Formation," Evaluation Review 15, #1 (Feb. 1991):46-74

[24] See, for example, Oran R. Young, International Cooperation--Building Regimes for Natural Resources and the Environment, Ithaca: Cornell University Press, 1989; Peter M. Haas, Saving the Mediterranean--The Politics of International Environmental Cooperation, New York: Columbia University Press, 1990. This is also the assumption that underlay those agreements presented at the "Earth Summit" in June 1992.

[25] "The Tragedy of the Commons," Science 162 (1968):1243-48. Cogent critiques of Hardin's "tragedy" can be found in Ronald Herring, "Resurrecting the Commons--Collective action and ecology," Items (SSRC) 44, #4 (December 1990); Robert Wade, Village Republics: Economic Conditions for Collective Action in South India, Cambridge: Cambridge University Press, 1988; and Elinor Ostrom, Governing the Commons--The Evolution of Institutions for Collective Action, Cambridge: Cambridge University Press, 1990, ch. 1.

[26] These two aspects of the collective goods problem have been analyzed exhaustively, by and large to prove that such action is difficult, if not impossible. See Olsen, op. cit.; and Hardin, op. cit. A summary of the problem may be found in Lipschutz, op. cit. See also Ostrom, op. cit.

[27] See, e.g., Benedick, Ozone Diplomacy, op. cit.

There are, however, two problems with the logic of assertion. The first is that the ozone problem is not at all typical of many environmental issues, including most of those affecting shared or open access resources. There are significant differences between the problem of controlling chlorofluorocarbons (CFCs), the major contributors to ozone depletion, for example, and that of limiting the myriad of sources of the more numerous and voluminous "greenhouse" gases that, it is believed, will contribute to global warming. Indeed, the variety of practices that, connected through various physical, economic, and social linkages, are contributors to this, and other global problems, increases the complexity of the global warming problem manyfold.

In particular, the ozone agreements treat a substance having a fairly small number of source production terms, and they also include a fairly straightforward arrangement by which developing countries commit to reductions in CFC use in exchange for technological assistance from developed countries in deploying substitutes. Furthermore, it is envisioned that the agreement will be managed and coordinated from the top down; that is, that governments will be responsible for seeing that the terms of the ozone agreements are met. The second, and more important, problem with arguments regarding the primacy of international collective action is that it is not at all clear that the institutional mechanisms for dealing explicitly with environmental degradation should be located within national governments. Indeed, as Robert Wade has observed for developing countries:

> Already over-stretched states in developing countries may not be able to provide the necessary resources to make [private property or state control regimes] work across myriad micro-locations. A malfunctioning approximation to a formalized system of state control or private property rights, based on a distant authority only dimly aware of local conditions, may be worse in terms of resource management than a strategy which aims to improve, or at least not impair, local systems of rules.[28]

This may also be the case for developed ones, too. Why?

The assumption here is that environmental problems, however they manifest themselves, fall within the purview of state management because only the state has the authority and the tools to manage resources in a rational fashion and to mediate among those who find themselves in conflict over resources and the environment. There are reasons to question this assumption. Indeed, it may even be that the state, and its administrative organs, stand as *obstructions* to environmental management.[29]

International agreements are generally phrased in terms of a national government's

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[28] Robert Wade, "The management of common property resources: collective action as an alternative to privatisation or state regulation," Cambridge Journal of Economics 11 (1987):105.

[29] For my definition of the "state," I turn to Alfred Stepan who characterizes it as: "[T]he continuous administrative, legal, bureaucratic and coercive systems that attempt not only to structure relationships between civil society and public authority in a polity but also to structure many crucial relationships within civil society as well." The State and Society: Peru in Comparative Perspective, Princeton: Princeton University Press, 1978, p. xii. Emphasis in original.

commitment to limitations on certain types of practices, often without precise specification as to the means of implementation.[30] Individual governments bear responsibility for implementation, and are presumed capable of drafting, legislating, and implementing appropriate plans and programs (and, if not, then "technology transfer" is assumed to provide the necessary capabilities). But we should regard skeptically the ability of many national governments to fulfill their end of such bargains, for three reasons.[31]

First, a government must have the "political will" to see the deal through, which requires a convergence of interests among contesting groups and elites that may be difficult to achieve (this point is discussed in greater detail below).[32] Second, assuming that a government can generate such consensus at the legislative or executive level, it must still possess or find the necessary "capabilities" to pursue its commitment, including technical and administrative competence as well as financial and other resources essential to implementation. Finally, even if these first two conditions are met, a convergence between the interests and activities of the government and the interests and needs of those who utilize the resources in question will be necessary.[33] Although this last requirement might seem self-evident requirement, it is not. Too often, "environmental protection" and conservation projects consist of plans and programs that pay no attention to conditions on the ground, with failure or unanticipated consequences the result.[34]

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[30] Thus, for example, the Montreal Protocol to Control Substances that Deplete the Ozone Layer commits signatories to reduce the use of certain substances by particular dates. It does not, however, specify how these reductions are to be accomplished; that is largely left up to the individual states to decide. There will be, however, restrictions on trade in ozone-depleting substances with non-signatories. See German Bundestag, op cit., pp. 260-66. International agreements are often institutionalized in terms of an "international regime," which may have some administrative and technical capacities for encouraging implementation, but which rarely possess the means to threaten the imposition of sanctions against defectors. For two recent discussions of environmental regimes, see Oran R. Young, International Cooperation--Building Regimes for Natural Resources and the Environment, Ithaca: Cornell University Press, 1989; and Karen Litfin, "Eco-Regimes: Playing Tug of War with the Nation-State," in: Ronnie D. Lipschutz & Ken Conca, eds., Green World, Global Stages: State and Social Actors in Environmental Politics, New York: Columbia University Press, 1993.

[31] See Migdal, op cit.; and Dietrich Rueschemeyer & Peter B. Evans, "The State and Economic Transformation: Toward an Analysis of the Conditions Underlying Effective Intervention," pp. 44-77, in: Peter B. Evans, Dietrich Rueschemeyer, & Theda Skocpol, Bringing the State Back In, Cambridge: Cambridge University Press, 1985.

[32] "Political will" is a notoriously difficult quantity to pin down; it is generally used when an analyst is unsure of what domestic politics consists. An insightful critique of the notion of "political willpower" can be found in Paul Kennedy, "Fin-de-Siècle America," New York Review of Books, June 28, 1990, pp. 31-40.

[33] See, for example, William Ascher & Robert Healy, Natural Resource Policymaking in Developing Countries--Environment, Economic Growth and Income Distribution, Durham, NC: Duke University Press, 1990, especially pp. 17-30; Gilberto C. Gallopin, Pablo Gutman, & Hector Maletta, "Global impoverishment, sustainable development and the environment: a conceptual approach," International Social Science Journal 121 (Aug. 1989):375-98.

[34] See, e.g., Ascher & Healy, op cit.; Bruce Rich, "The Emperor's New Clothes: The World Bank and Environmental Reform," World Policy Journal, 7, #2 (Spring 1990):305-29; Nancy Lee Peluso, "Development & Forest Extraction: Tracking the Interactions between Competing Forms of Resource Management," Paper prepared for a Symposium on Biodiversity and the Development Process, American Anthropological Association Meeting, 27 Nov.-1 Dec., 1990, New Orleans, LA.; Jesse Ribot, "Sustainable Development? The Role of Urbanization and Market-State Relations in Africa's Rural Decline," Paper prepared for a panel on "Sustainable Development," Association of American Geographers' 1990 Annual Meeting, Toronto, Ont., 19-22 April 1990; Robin Broad, John Cavanagh, & Walden Bello, "Development: The Market is Not Enough," Foreign Policy 81 (Winter 1990-91):144-62.

We can understand these difficulties from three different perspectives. In resource-rich[35] industrialized, capitalist states, the environment is *externalized* with respect to the economy; in Karl Polanyi's terms, economy and environment are "disembedded" from society.[36] Thus, not only are the "incorrect" price signals sent to the economy where environment is concerned (thereby commodifying the environment), the environment is further abstracted from society by being regarded as a simple, exogenously-generated input to production (which, moreover, can be replaced by technology). Here, the state is in the position of protecting property rights that, in turn, provide it with certain prerogatives (see below). Governments can hardly command that new systems of property rights be instituted forthwith and not expect resistance.[37]

One of the fundamental bases of state power is control over the resources located within the national territory. Governments are in a position not only to grant property rights to resources but also to use them or allocate them to specific users for state-building or maintaining purposes. In Western, industrialized countries, this privilege has been internalized and the capability is pretty much taken for granted. Not only are national authorities in a position to control the flow and exploitation of resources to certain users, they also do so within the context of a well-developed legal system that has evolved in parallel to markets, where, in effect, property rights are bought and sold. State agencies can, as well, tap into these markets, extracting revenues and resources for their own purposes. Indeed, in Western countries, such extraction has, in the past, accounted for a not-inconsiderable fraction of national revenues. (Symbolically, resource extraction continues to exercise a powerful hold in many countries.) At the same time, however, these capabilities are not nearly so strong when it comes to altering property rights so as to promote environmental conservation, since such efforts often appear to undermine existing property rights and social institutions.[38]

In formerly-socialist countries, still subject to scarcity of inputs and now driven by what Michael Burawoy and Pavel Krotov call "primitive bartering among enterprises,"[39] the environment is subordinated to an *economy of affection* necessary to fulfill basic enterprise

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[35] The notion of "resource-rich" has to do with access on international markets and not national factor endowments.

[36] The Great Transformation, Boston: Beacon Press, 1957. Much of what follows here is based on work by Zsuzsanna Gille, "Environmental Destruction in State Socialism--The Outline of a Theoretical Approach," unpublished paper, April 1992.

[37] Vandana Shiva puts this problematic nicely, in speaking of the imposition of "technological solutions" on society: "[S]ince both nature and society have their own organisation, the superimposition of a new order does not necessarily take place perfectly and smoothly. There is often resistance from people and nature, a resistance which is externalised as 'unanticipated side effects." The Violence of the Green Revolution, London/Penang: Zed Books/Third World Network, 1991, p.21.

[38] The essential question here is: what is required for the maintenance of state and society? Is it continued extraction of resources? Or is it conservation of resources? The second may require overturning the basis for the first.

[39] Michael Burawoy & Pavel Krotov, "The Soviet Transition from Socialism to Capitalism: Worker Control and Economic Bargaining in the Wood Industry," American Sociological Review 57 (Feb. 1992):18.

requirements.[40] Any signals sent by the authorities to enterprises regarding environmental degradation are lost in the noise; they are either disregarded, being too small and ineffectual, or they stand as an obstacle to production. Here, the state's right to control and allocate resources is no longer merely contested; it is almost wholly non-existent. Central planning has been replaced by barter; property rights have been altered, to be sure, but not in a way that promotes environmental conservation (or even efficient production).

Finally, in less-developed countries we are presented with "states" that, in many instances, are states in name only. As Ronald Herring puts it:

> States in the [South Asian] region mock the theoretical states of academic discourse, dissolving into society with distance from the center, much as blood vessels diminish in size with distance from the heart until they disappear into spaces around cells."[41]

The weakness of LDC governments and states has been recognized generally as involving lack of "capacity," that is, an inability to intervene meaningfully in various areas of socio-economic life,[42] for two reasons. First, state agencies may lack "autonomy" in that they have very little wherewithal to independent action. Second, the state may be a "captive" of civil society (rather than the more-commonly imagined converse): It is so riddled by elements of domestic society that it is, in effect, simply another social institution, and not an autonomous actor.

These two explanations are not unrelated. To the extent that the state is intertwined with society, its agencies will find themselves constrained in their freedom to act. The residual power and autonomy of the state then rests not on the independent exercise of capacities but on the degree to which agencies can distribute favors, extract resources via the market, and create social obligations among domestic groups. In other words, rather than having re-created the European dichotomous state, in which laws and market evolved in parallel, most LDCs have had Westernized legal systems imposed on much older social arrangements. In the struggle for domination, it is no surprise that the older system absorbs the newer one. The result is that legal efforts to protect the environment or pursue particular policies are undermined by the older "web of social relations" described earlier.[43]

There is some reason, moreover, to think that this problem extends even to industrialized states, albeit in a different fashion. In effect, even where states are strong, and

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[40] See also Fred Block, Postindustrial Possibilities: A critique of economic discourse, Berkeley: University of California Press, 1990, pp. 25-29, and citations therein.

[41] Herring, op. cit., p. 65.

[42] Peter B. Evans, Dietrich Reuschemeyer, and Theda Skocpol, "On the Road toward a More Adequate Understanding of the State," In: Peter B. Evans, Dietrich Reuschemeyer, and Theda Skocpol, Bringing the State Back In, Cambridge: Cambridge University Press, 1985, pp. 351-52.

[43] Migdal, op. cit.

there is a strong distinction between legal/bureaucratic systems and the market, state competence is increasingly coming under challenge.[44] Furthermore, because the impacts of various types of environmental degradation are not uniform across national territories but, rather, unevenly distributed *within* those territories, national governments will be increasingly hard put to mediate and manage the resulting patchwork of effects and costs.

All of this is not to say that states or governments are somehow irrelevant in the face of global ecological interdependence; to the contrary, at both the international and domestic levels, state involvement is essential. But it does suggest a need to change the focus of analysis so that we take into account potential and existing bureaucratic incapacities, and imagine how these shortcomings might addressed. In particular, we need to understand how to "mesh" the structure and organization of environmental protection projects with the structure and organization of local societies and groups in affected areas. This means, as I shall argue further below, that these communities must be included in the planning effort, and that they not be treated as unwanted externalities.[45] In other words, environmental protection and conservation requires a far better understanding of the webs of social and productive relations that characterize communities, greater knowledge about the ways in which these local systems are linked into global ones via systems of exchange, institutions, and norms, and vice versa,[46] and a much better understanding of how to "couple" global agreements with local needs and conditions.

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[44] This is a notion that is also the subject of much speculation and academic conflict: W(h)ither the state? See, e.g., Held, op. cit. For a contrary view, see Janice Thomson & Stephen Krasner, "Global Transactions and the Consolidation of Sovereignty, pp. 192-219, in: Ernst-Otto Czempiel & James N. Rosenau, Global Changes and Theoretical Challenges--Approaches to World Politics for the 1990s, Lexington: Lexington Books, 1989.

[45] Herring (op. cit.) points out that "Historical work on actual common-property systems in the [Indian] subcontinent suggests that local institutions became marginalized or criminalized as the state centralized control and removed local authority through novel proprietary claims."

[46] The literature on local-state organizational and management relations is extensive. See, e.g., Michael F. Maniates, "Organizational Designs for Achieving Sustainability: The Opportunities, Limitations, and Dangers of State-Local Collaboration for Common Property Management," Paper prepared for presentation at the First Annual Meeting of the International Association for the Study of Common Property, 27-30 Sept., 1990, Durham, NC. But studies linking local-state-international levels are rare, if not non-existent.

IV. The logic of a local focus

There is a growing body of *functional* evidence suggesting that environmental protection and conservation of resources might be accomplished more efficiently and effectively through efforts at the local level (international coordination problems notwithstanding).[47] There are also *analytical* grounds for this approach, based on the structure and nature of resource-using social institutions. If we regard a social institution as, first, the embodiment of power relations within a society and, second, having as one of its primary goals its "reproduction" over time, the possibilities of significant, large-scale reform would appear to be severely circumscribed. At the international level, environmental regimes are hardly likely to impose on states the obligation to seriously alter domestic social institutions; indeed, this is why so much attention is paid to economic "incentives" that alter relative prices as a means of changing consumer behavior on a large scale. Such incentives leave untouched fundamental structures of society and, in many instances, impose costs on those who appear to be no position to challenge these social relations and relations of production.[48]

Moreover, incentives legislated at a distance may produce behavior or outcomes quite different from what is intended.[49] In reproducing social institutions through legislative and fiscal mechanisms, one is, in essence, recreating the relationships that caused the environmental degradation in the first place. In other words, if we see regimes and social institutions as mechanisms intended to maintain structural relations of power, as well as being arrangements to facilitate collective action and cooperation (as is more commonly assumed), we need to reflect on what might be the appropriate level and scale for efforts intended to reconstruct collective behavior and social relations not only *instrumentally* but also *structurally*. This is the analytical basis for a focus on local action.[50]

The functional argument for focusing locally rests on five points: (1) scale of ecosystems; (2) assignment of property rights; (3) location of knowledge; (4) participation of stakeholders; (5) sensitivity to feedback.[51]

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[47] As Herring notes (op. cit., p. 65): "[A]ll local arrangements for dealing with natural systems are embedded in a larger common interest defined by the reach of eco-systems beyond localities."

[48] Indeed, international regimes are much more likely to reinforce state power and position. See, e.g., Ken Conca, "Environmental Protection, International Norms, and National Sovereignty: The Case of the Brazilian Amazon," Paper prepared for the Dartmouth College/U.N. University Conference on Sovereignty and Collective Intervention, Dartmouth College, May 18-20, 1992.

[49] Shiva, op. cit.

[50] To be sure, the maintenance of a common property resource, which can be regarded as a localized resource regime, serves to reproduce structurally the internal social relations of that regime but, at least, these are relations that are visible to participants. This is a point that needs to be further developed. In particular, in view of Herring's point about the "nesting" of resource regimes, does a series of coordinated, hierarchically-linked set of regimes promise to be any better at conservation than what now exists?

[51] Although there are long-standing arguments for the decentralization of administrative systems and functions in development planning, the argument presented here has its roots in arguments about the "sociology of knowledge." For a discussion of problems with decentralization, see M. Bazlul Karim, "Decentralization of Government in the Third World: A Fad or Panacea?" International

System scale. Although the environmental effects of certain activities may be manifested or mediated via a commons resource, these activities tend to be bounded both in social, economic, and physical terms.[52] To quote Ronald Herring again: "[A]ll local arrangements for dealing with natural systems are embedded in a larger common interest defined by the reach of eco-systems beyond localities."[53] We can see local systems of production and action as being nested within larger ones, comprising *networks* of resource users, rather than existing either as discrete or totally-aggregated arrangements.[54] Moreover, these networks are embedded in overlapping but not necessarily coterminous social, political, economic, and physical spaces.[55] What we are confronted with, then, are problems of, on the one hand, *collective action* at a limited spatial scale and, on the other, *coordination* among units at larger scales.[56]

Property rights. Standard neo-classical economic analysis argues that degradation of resources and the environment result from the inappropriate "assignment" of property rights.[57] Absent well-defined, contract-based rights (preferably private), property will remain open access and subject to overuse and destruction. Only if a user can base the exploitation of a resource on firm expectations about its future availability, can she make a rational decision about both the pattern of resource use over time and the rate of use that will maximize return without destroying the resource (in the case of renewable ones) or efficiency

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Studies Notes 16, #2 (Spring 1991):50-54. For a good summary of the sociology of knowledge literature, see Peter M. Haas, "Introduction: Epistemic Communities and International Policy Coordination," International Organization 46, #1 (Winter 1992):20-26.

[52] While it is true that, even on a local level, political systems rarely overlap with natural ones, there is, nonetheless, a logic to the scale of systems of production that argues for thinking in terms of such limits.

[53] Herring, op cit., p. 65.

[54] In other words, the activities that lead to environmental degradation tend to be spatially discrete although the cumulative impacts may aggregate on a much larger spatial scale.

[55] Thus, for example, human rights networks and indigenous peoples networks are not the same, although they overlap in places and share some nodes. This notion of networks is drawn from economic geography, which looks at nodes of production at large scale, rather than treating with political actors as the appropriate economic unit of analysis, as is the case with most of the international relations and much of the international political economy literature. An interesting application of this idea can be found in Chadwick F. Alger, "The World Relations of Cities: Closing the Gap Between Social Science Paradigms and Everyday Human Experience," International Studies Quarterly 34 (1990):492-518.

[56] This separates the combination of collective action and coordination that is undertaken at the international level.

[57] I use the term "property rights" here in a rather broad sense to refer to all of those arrangements, either codified as law or less-formal arrangements, that "define or delimit the range of privileges granted to individuals [or organized collectivities] to specific assets"; see Gary D. Libecap, Contracting for Property Rights, Cambridge: Cambridge University Press, 1989, p. 1. For my purposes, these assets refer to environmental resources, including land, water, forests, species, etc., and include access, harvesting and other types of usage rights, as well as outright private or collective ownership. The reader should note that many analyses of property rights with regard to resources and environment tend to discount or disregard "informal" usage systems; this often leads, as Ronald Herring as pointed out, to the marginalization or criminalization of such systems.

(in the case of non-renewable ones).[58]

But the assignment of appropriate property rights to resources is not simply a matter of auctioning rights to the highest bidder, in the expectation that the user will then find it in her rational best-interest to exploit the resource in a sustainable or maximally-efficient manner. Because flows of energy and other inputs into ecosystems change across time periods, and may be variable across a large number of such cycles, resource productivity may vary as a function of a large number of biogeophysical variables.[59] Indeed, it seems likely that, without basic information about the nature of a resource, including but not limited to its extent, its reproduction cycle, its relationship to other resource systems, and so on--information that often cannot be acquired easily or quickly--any strictly economic assignment of property rights is likely to lead to degradation of the resource.[60]

Knowledge. The information required for "sustainable" use is often available in some form only as "local knowledge," embedded, for example, in long-standing usage practices of indigenous peoples, who may have utilized the resource on the basis of exploitation and property rights systems that incorporate this information.[61] Local knowledge is not, however, restricted to antediluvian societies. A corporation's understanding of localized social relations can make a big difference in its being accepted by a community; "old-timers" and "stakeholders" may know things about local ecosystems than outsiders cannot.[62] Such knowledge may lie in the hands and activities of those who judge themselves to have a

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[58] Hardin, op. cit.; see also R.J. Smith, "Resolving the tragedy of the commons by creating private property rights in Wildlife," CATO Journal 1 (1981):439-68; Terry Anderson, et al., Free Market Environmentalism, San Francisco: ICS Press, 1991.

[59] The political consequences of ignoring variability can be seen in a number of disputes over water allocation in shared river basins. See, e.g., Shiva, op. cit., pp. 121-70. This type of variability is somewhat different in the case of fossil fuels or minerals where the variations are mostly a function of exogenous economic and political variables. For an argument that casts this latter case in terms of property rights, see Ronnie D. Lipschutz, When Nations Clash--Raw Materials, Ideology, and Foreign Policy, New York: Ballinger/Harper & Row, 1989, ch. 2,3.

[60] This is an intuitively logical conclusion that has been discussed in some detail by Richard B. Norgaard, albeit in a slightly different form. He makes the point that the homogenization resulting from social organization based on specialization and exchange has had the effect of wiping out the type of "local knowledge" essential to the maintenance of resources and biological diversity. See, e.g., "Economics as Mechanics and the Demise of Biological Diversity," Ecological Modelling 38 (1987):107-21. A critique of the notion of "maximum sustainable yield" (as opposed to a much more difficult-to-define "optimal yield") can be found in Robert Dorfman, "An Economist's View of Natural Resource and Environmental Problems," pp. 67-96, in: Robert Repetto, ed., The Global Possible--Resources, Development, and the New Century, New Haven: Yale University Press, 1985.

[61] See, e.g., Norgaard, "Economics as Mechanics...," op. cit.; Richard B. Norgaard, "Sociosystem and Ecosystem Coevolution in the Amazon," Journal of Environmental Economics and Management 8 (1981):238-54; Peluso, "Development and Forest Extraction," op. cit.; Nancy Lee Peluso, Rich Forests, Poor People: Resource Control and Resistance in Java, Berkeley: University of California Press, 1992; Lori Ann Thrupp, "Legitimizing Local Knowledge: From Displacement to Empowerment for Third World Peoples," Agriculture and Human Values 6 (Summer 1989):13-24.

[62] This point was made with some emphasis in an interview with Jon Kennedy and Harley Greiman, U.S. Forest Service, Sacramento Area Office, June 11, 1992; and also in an interview with Vicki Campbell, Arcata BLM, July 30, 1992.

particular "stake" in the resource under question.[63] In either case, localized systems of property rights usage can be more closely tailored to the temporal and spatial variations of an ecosystem or, for that matter, a social system embedded in an ecosystem.

Property rights arrangements embedded in ecosystems can be regarded as localized "resource management regimes," in the sense that they provide a "conjunction of convergent expectations and patterns of behavior or practice." The result of this conjunction is "conventionalized behavior or behavior based on recognizable social conventions...[that] are guides to action or behavioral standards which actors treat as operative without making detailed calculations on a case-by-case basis."[64] Many such management arrangements have been documented in which various types of social, economic, and moral constraints, as well as an intimate knowledge about the character of a resource, restrict levels of extraction to a level that is sustainable over long periods of time;[65] Some of these systems, moreover, are to be found in "Western" societies.[66] I do not mean to idealize such systems; under external pressure, they often prove less than robust, and the entry of growing numbers of users may also lead to resource degradation. Nonetheless, the growing body of data on and case studies of such arrangements suggest that they are worth looking at more closely, especially in terms of their potential applicability to industrialized societies.

Stakeholders. Inclusion of all "stakeholders" in a resource management regime is essential, because failure to do so can lead to free-riding or defection, and because stakeholders often possess different bits of knowledge relevant to resource management. Inasmuch as knowledge is often local, and in order to ensure equitable access and use, management schemes and decisions must be inclusive and participatory. Local participation is, at the present time, a buzzword in the sustainable development literature,[67] but there is an inherent logic in this notion that extends beyond the strictly economic self-interest of local

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[63] While "indigenous knowledge" is a reasonably well-understood concept, the application of this concept to industrialized society is somewhat more problematic. I would argue that, in the latter case, the equivalent body of knowledge is a much more subtle and fragmented thing. Nonetheless, there is much that we "know" from our experiences within spatially-defined spheres of activity that would fall into the realm of "indigenous" knowledge (e.g., what is the route from Berkeley to Santa Cruz that, on average, is likely to result in the fastest trip). Such knowledge might be useful, for example, in thinking about the larger issue of transportation in the San Francisco Bay Area. See Charles E. Lindblom & David K. Cohen, Usable Knowledge--Social Science and Social Problem Solving, New Haven: Yale University Press, 1979, pp. 12-13.

[64] Oran Young, Resource Regimes--Natural Resources and Social Institutions, Berkeley: University of California Press, 1982, p. 16.

[65] See, e.g., Ostrom, op cit., especially ch. 3; Fikret Berkes, Common Property Resources--Ecology and community-based sustainable development, London: Belhaven Press, 1989; and Bonnie J. McCay & James M. Acheson, eds., The Question of the Commons--The Culture and Ecology of Communal Resources, Tucson: University of Arizona Press, 1987.

[66] See, for example: David L. Miller, "The Evolution of Mexico's Spiny Lobster Fishery," pp. 185-98; James M. Acheson, "Where Have All the Exploiters Gone? Co-management of the Maine Lobster Industry," pp. 199-217, in Berkes, ed., op cit. Ostrom (op. cit., p. 25) points out that most law firms are a form of common pool property system.

[67] See, e.g., "Sustainable Development--From Theory to Practice, a special issue of Development--Journal of the Society for International Development 2/3 (1989).

users. Knowledge may be distributed among the users of a resource, and conservation or protection may therefore come to depend upon its pooling, and regime formation and maintenance must be inclusive and participatory if it is to generate the cooperation of all present and potential users. Finally, to the extent that collective action is based on non-economic factors, political solidarity among stakeholders would seem to be essential, and this also argues for broad participation.

The process of forming a localized resource management regime is messy. Simple availability of technical information about the condition of a resource is rarely sufficient to generate a consensus on solutions within the user community.[68] Because some resources--for example, water collection and distribution systems--have many and varied users, the definition of a problem is likely to be a process of *social reconstruction*, rather than simply a matter of identifying shortfalls in supply or damage to wildlife or habitat.[69] Legislation originating from "above" is rarely able to take into account the valid concerns of all stakeholders in a resource because of a lack of information about the institutional history and path dependency of a resource management system, which are of critical importance to its revision.[70]

A community of resource users is not simply an economic construct, it is an historically-constituted entity, linking together individuals by implicit and explicit bonds of social obligation, whose access to a resource is based upon patterns of access and distribution devised in the past.[71] As noted above, while these patterns may not be distributionally just--witness, for example, the many recent claims by Native Americans demanding the restoration of historical rights to particular resources--they do have the weight of history behind them.[72] Moreover, the costs of altering this pattern can be significant; sunk costs are high and

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[68] Indeed, much of the "knowledge" may exist in the form described above. This is, in essence, the logic behind Bioregional California. Not only is there disagreement about technical information, there is little consensus about what constitutes proper social relations within resource-using communities. Only via an extended discursive process can this knowledge be pooled and put to good use.

[69] This process has been nicely described in the work of Luther Gerlach; see, for example, "Cultural Construction of the Global Commons," in: Robert H. Winthrop, ed., Culture and the Anthropological Tradition--Essays in Honor of Robert F. Spencer, Washington, D.C.: University Press of America, 1990, pp. 319-42. See also Ann Hawkins, "'Contested Ground': International Environmentalism and Global Climate Change," in: Ronnie Lipschutz & Ken Conca, eds., op. cit. A well-written and entertaining overview of the social construction of reality can be found in Walter Truett Anderson, Reality Isn't What it Used to Be, San Francisco: Harper & Row, 1990.

[70] Young, op. cit., 1989; interviews with Vicki Campbell, Arcata, California BLM, July 30, 1992; Freeman House, Mattole Watershed Alliance, Arcata, CA, July 30, 1992.

[71] See, e.g., Berkes, op cit.; and Bonnie J. McCay & James M. Acheson, The Question of the Commons, op. cit. Even the patterns of resource use systems in industrialized countries are the result not of rationalized economic planning but of historically-contingent episodes and accretions. Liebcap's (op. cit., ch. 3) account of mineral rights contracting in California and Nevada nicely illustrates this last point.

[72] What then, is the difference between "local" and "international" regimes if both are unjust and the reproducers of power relations? This is a valid question for which I do not have an answer; indeed, it was the Federal government's use of its leverage against "states rights" that was responsible for the legislation of civil rights in the 1960s and 1970s. Localism is often not a democratic force.

institutionalized paths are difficult to renegotiate.[73] As I noted above, legislative solutions tend to be framed in general terms, they cannot take into account specific contexts. Resource regimes, in being created, reconstituted, or revised, *must* take into account such specific conditions.

Feedback. Successful resource conservation and restoration is very dependent on feedback, that is, upon a constant flow of information regarding its condition. Some of this information can be obtained through technical instrumentation--for example, air pollution monitors--but additional data are often only available from stakeholders, who are in a position to observe the state of the resource.[74] To the extent that such feedbacks are observable on a spatially-limited scale, this point represents an argument for a more localized focus where resource management regimes are concerned.[75]

Given these functional arguments for local action, what political or social forms are available and how might such forms be relevant to global environmental change? As I will suggest below, a bioregional approach, as it is developing in California, is one approach to localized resource management within systems of production of national and global scope. And, although the California case is not explicitly linked to global environmental change--it is primarily concerned with biodiversity and habitat protection--it does take on the problem of social complexity, which is linked to global environmental change.

IV. Reconstructing Resource Regimes

As the emergence of the California bioregional initiative suggests, the process of "reconstructing" resource management regimes is not simple; indeed, it is not altogether clear that such revisions as are underway will "work." A consensus about the nature of the problem must be generated. Stakeholders must be identified. A mechanism for debate must be devised. The process of renegotiation, once begun, may have more the appearance of a war, being fought out in the media, in hearings, in community meetings, via demonstrations, and so on.[76] As I noted above, one of the most critical aspects has to do with the range of participants in a resource regime. Exclusion of any users of or stakeholders in a resource

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[73] See, e.g, Libecap, op cit.

[74] See, e.g., Ostrom, op cit., p. 79; Campbell, op. cit. Much of the data used to argue for limits on takings from the Mattole River fishery (on the northern California coast) was collected by the Mattole Watershed Salmon Support Group, a local group with some scientific expertise but little access to high-tech monitoring systems (Campbell, op. cit.).

[75] This argument obviously does not hold true for phenomena such as the stratospheric ozone hole or global warming, but I do not mean to assert that localized resource management systems are sufficient sources of knowledge; flows through wide-ranging informational networks are important, as well. The relationship between scientific-technical and local knowledge is not one that has, to the best of my knowledge, been explored. For some thoughts on the matter, see the special issue of International Organization edited by Peter Haas, "Knowledge, Power, and International Policy Coordination," Vol. 46, #1 (Winter 1992).

[76] This argument is developed in greater detail in Ronnie D. Lipschutz & Judith Mayer, "Property Rights, Constitutive Rules, and the Renegotiation of Resource Management Regimes," In: Ronnie D. Lipschutz & Ken Conca, eds., op. cit. A "theater model" of politics can be found in Anderson, op. cit.

virtually guarantees that the resource will be further abused or degraded, because those excluded will have no interest in seeing it sustained or protected.[77] This means that the number of stakeholders may be very large, and the larger the number, the messier renegotiation becomes. And there is no guarantee that this complicated effort at revising what is, in essence, culture, will be successful. Yet, this process has emerged and is underway and can be traced in a number of different venues.

California. In California, for example, several such "renegotiations" have taken place over the last several years, involving forests and water.[78] All or parts of each of these resource/ environment systems have been under the centralized management of the State of California, representatives of the Federal Government, or large monopoly suppliers (utilities). Management was originally centralized because, under the tenets of Progressivism, as Samuel P. Hays puts it, "Efficiency, expertise, system infused the entire order."[79] Economies of scale, it was thought, would result from efficient and expert management of resources, and benefits would accrue to all.

But the ideology and practices of Progressivism are now under severe attack in the United States as limits to resources and the costs to the environment become more apparent.[80] Old-growth forests are severely depleted yet the management system continues to encourage their destruction; this has generated growing oppositional movements and activities. Water, in the sixth year of a California-wide drought, is increasingly seen as limited, and yet it must somehow be provided to a vast array of users, including wildlife. In short, California is a laboratory for the renegotiation of resource regimes. It is possible to see the bioregional strategy as one means of fostering this process.

Bioregionalism as an analytical and political concept has a history of some years.[81] It

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[77] In other words, in the negotiation of a collective action solution to a problem, there is always the risk that stakeholders left out will choose to "free ride."

[78] The "Sierra Accord" negotiated among environmental groups and lumber companies failed in the California Legislature. It was followed by Governor Wilson's "Grand Accord," which also came apart; see Elliot Diringer, "Timber Bills Spawn New Hostilities," San Francisco Chronicle, Jan. 27, 1992, p. A17; Pat Paquette, "Sierra Discord," California Journal, Dec. 1991, pp. 575-77. According to Gail Lucas (interview, Navarro Ridge, California, July 31, 1992), the bill is to be reintroduced and, according to an agreement struck among various interests, passed by the Legislature. The water accord, which looked at one time to be coming together, has also fallen apart; see Elliot Diringer, "Big Step Toward Agreement in State Water Wars," San Francisco Chronicle, July 24, 1991, p. A1; Lori Olszewski & Elliot Diringer, "State Facing Impasse Over Water," San Francisco Chronicle, Dec. 31, 1991, p. A1.

[79] "Preface to the Atheneum Edition," Conservation and the Gospel of Efficiency--The Progressive Conservation Movement, 1890-1920, New York: Atheneum, 1980, p. iv.

[80] Mark Nechodom, a graduate student in History of Consciousness at UC-Santa Cruz, who has recently been organizing and giving seminars on the "New Forestry" for the California Dept. of Forestry, argues that much of the impetus behind even radical environmentalists is Progressivist in origin. Private conversation, April 23, 1992.

[81] See, e.g., Kirkpatrick Sale, Dwellers in the Land: The Bioregional Vision, San Francisco: Sierra Club Books, 1985; Gary Snyder, "Coming into the Watershed," San Francisco Examiner, March 1 & 2, 1992.

can be regarded as an effort to reconcile--indeed, to structure--human systems to the scale of natural systems, most often creek and river watersheds, but sometimes larger geographical regions. As an ecological concept, the bioregion is somewhat less well-defined, although it can be thought of as a biogeographical province within which species, habitats, and landforms are linked, if not identical. The emergence of bioregions within California is a result of the confluence of these two lines of analysis--the ecological and the political--and stalemate within the state's institutionalized political processes.

Bioregions in California were originally conceived as a means of providing fora for conflict resolution among the many groups and interests laying claim to various resources. The California bioregional project is of particular interest for, not only does it involve coordinated resource management planning and execution at the level of local regional ecosystems, it also rests on the hope of a consensus around such planning amongst major stakeholders (including representatives of county and local governments, environmentalists, ranchers, and corporations) in each of the 12 bioregional provinces. The Memorandum of Understanding signed in September 1991 was, in part, a recognition that institutionalized politics would no longer suffice to deal with such resource issues: some new approach would be necessary.[82] Agency managers took a rather unglamorous concept--coordinated resource management planning, or "CRIMP"[83]--and turned it into something with political resonance.

The initiative was launched via a series of regional meetings, at which representatives of the state resource agencies listened to testimony and presentations from groups spanning a broad range of perspectives. What, exactly, was envisioned as emerging from this process does not seem to be clear to observers; perhaps the organizers believed that such open fora would eventually lead to compromise or exhaust the participants. What is more interesting is what the organizers may not have anticipated at all: the political effect of drawing lines on a map.[84] In authorizing Bioregional California, the state's resource agencies may have, unwittingly, created the constitutive basis for new political entities whose precise form and

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[82] Interview with Robert Ewing, California Department of Forestry-FRRAP, June 11, 1992.

[83] "CRIMP" "[I]s a process designed to achieve compatibility between the uses being made of natural resources, energy and mineral resources, livestock production, watershed, wildlife habitat, wood products, and recreation; and that such resources are improved, if necessary, and perpetuated in a condition of high quality for future generations. A coordinated resource management plan affects all ownerships in the planned area. All major uses of the areas are considered and coordinated to avoid unacceptable and unnecessary conflicts. Each plan should become a coordinated management program administered by the principal owners, managers, and users of the resources addressed by the planning process." Memorandum of Understanding, "Coordinated Resource Management and Planning in California," Sacramento, CA., January 11, 1990.

[84] Several observers have pointed out to me that the dispute resolution/management process at the core of the bioregional strategy is not very different from the interagency land use and resource management practices of a variety of state and federal agencies. Still, none of these agencies have ever thought to "reconstruct" the political/environmental terrain in quite this way. Deborah Jensen and Jeff Romm have also described autonomously generated bioregions in the Santa Cruz mountains and along the North Coast of California; these will acquire greater legitimacy by virtue of the State's initiative. Private conversation with Deborah Jensen and Jeff Romm, UC-Berkeley, April 15, 1992.

authority has yet to be determined.[85]

As of mid-1992, the bioregional process was still in its early stages, and the political and policy outcomes are, as yet, unclear. It has only really taken place in the so-called Klamath Province, which encompasses the northwestern corner of California, beginning some 100 miles north of San Francisco and extending to, and possibly past, the Oregon border. Participants in the process have split the Province into four sub-regions, and there may be further splitting as discussions proceed. Finally, there has been a strong and sustained demand for greater local authority in the planning and management process.[86]

Where all of this will lead is, as yet, unclear. There are numerous issues to be addressed: How does one move from talk to action? How can resources be surveyed and inventoried? What are the effects on property rights? Where do bioregions fit in vis a vis other political jurisdictions? Who pays--an important question in a state in fiscal crisis? None of these questions can yet be answered, and the whole initiative could still collapse. Nonetheless, by framing the process in terms of "bioregionalism," the initiators of the effort have unleashed a hitherto dormant political energy that could, in the longer term, have effects across California, the United States, and the world.[87]

The construction or renegotiation of resource management regimes is obviously a process that is highly charged in political terms, since it proposes to alter extent property rights. Bioregionalism, although conceptualized as an effort to reconcile conflicting interests, must, inevitably, do the same. The difference is that a bioregional approach tries to coordinate among resources and stakeholders, rather than focus on a single resource or regulate the actions of particular property owners. Whether such coordination can be successful is not yet clear, since the entire project has been in business for such a short time.

As a practice, however, the California initiative begins to institutionalize the local and regional management of "global" resources, and argues for a different lens through which to look at the more general problem of global climate change. Indeed, in the longer run, bioregionalism could even alter the relationship between international environmental regimes and the users of resources and, in so doing, change the way we formulate policies for addressing global environmental problems.

Other practices. In more general terms, we can identify four ways in which the process of local renegotiation and reconstruction is changing the global landscape of

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[85] See John G. Ruggie, "International Structure and International Transformation: Space, Time, and Method," pp. 21-35, In: E.O. Czempiel & J.N. Rosenau, eds., Global Changes and Theoretical Challenges, Lexington, Mass.: Lexington Books, 1989, p. 31.

[86] Campbell, op. cit.; interview with Kimberly Rodrigues, UC Extension Forester, Eureka, California, July 28, 1992.

[87] That bioregionalism is a loaded political term is widely recognized by participants in the process; (Rodrigues, op. cit.; Campbell, op. cit.; House, op. cit.). But to some degree, it has been used by the initiators, in a more-or-less conscious manner for the very reason that "business as usual" is "not working" (Ewing op. cit.; interview with Jon Kennedy & Harley Greiman, U.S. Forest Service, Sacramento, June 11, 1992).

environmental politics. First, there are a variety of groups and organizations involved in local restoration and development projects. By themselves, they are not very significant; taken even in aggregate, they still do not amount to very much. But each, by itself, stands as a form of social organization that can be studied and reproduced elsewhere. For example, individuals working on a small-scale watershed restoration project in the Sierra Nevada foothills may not think of themselves as being linked into global networks. But, they receive frequent visitors from other parts of the United States and the world, who come to study the project in order to restore other watersheds. Those projects, in turn, energize others, and so on.[88]

The second component of the process rests on groups of locally-based activists. These are the people who undertake education, demonstrations, and proselytizing. Some of these are groups engaged in an effort to, as noted at the beginning of this paper, revise the constitutive basis for relationships between human society and nature; others are less ambitious. Although these groups have, traditionally, been urban, their are appearing in increasing numbers in rural areas, as well, where the resources are actually located. Moreover, there is a growing convergence between some of the more and less radical groups working on these issues.

The third component is based on networks. In the "sphere" of environmental activities, we see the emergence of global networks of actors linked together by common strategies and goals.[89] All of these networks exist under the over-arching rubric of a general environmental ethic--what might be called an "operating system"--although the specific form of relations through the network and structure of the actors at the ends and nodes of the network vary a great deal. Some of these networks are quite consciously anti-state, others are oriented toward state reform, some simply ignore the state altogether. Greenpeace, for example, constitutes a global network in itself, with both anti-state and state-reforming tendencies.[90] The Asian Pacific People's Environmental Network, based in Penang, is made up of both urban and rural organizations, and operates at the international and regional levels. A large number of these networks has been organized, around concepts of place, nationality, culture, species, and issues.[91]

In the Third World, there is burgeoning number of small-scale organizations are engaged in the provision of a vast range of services to marginal and neglected populations, in

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[88] The idea of environmental restoration is documented in John J. Berger, Environmental Restoration: science and strategies for restoring the Earth, Washington, D.C.: Island Press, 1990. A survey of such efforts in the Sierra bioregional province uncovered approximately 200 projects (Kennedy & Greiman, op. cit.).

[89] The notion of networks is briefly addressed by Sidney Tarrow, "National Politics and Collective Action: Recent Theory and Research in Western Europe and the United States," pp. 421-40, in: Annual Review of Sociology 14 (1988), pp. 431-33.

[90] See, for example, Paul Wapner, Making States Biodegradable: Ecological Activism and World Politics, Draft Manuscript.

[91] See Gareth Porter & Janet Welsh Brown, Global Environmental Politics, Boulder: Westview, 1991, pp. 56-60.

a manner that is largely independent of the overarching state.[92] Often, these organizations are coupled into the global political system through transnational alliances established with other organizations in the North. One example of such an alliance is a program called "From the Ground Up," administered by the Center for International Development and Environment of the World Resources Institute.[93] NGO activities associated with the June 1992 UN Conference on Environment and Development were coordinated through extensive trans-national alliances and networks of communication. Indeed, according to some participants, NGOs were instrumental in formulating the language for various of the agreements and charters under negotiation for presentation at the conference.[94]

Finally, the number of efforts underway to renegotiate resource management regimes is impressive; one need look only at the anthropological or sociological literature on virtually any developing country to find stories of struggles over common property resources reflecting a variety of approaches, both violent and non-violent. The key question is: Can all of these efforts, taken together, substitute completely for international agreements on environmental protection? No, but it is possible that they can form the basis for systems of implementation of those agreements.

Once it has been more generally recognized that environmental protection and resource management regimes must be individually tailored to meet local conditions, it will also become evident that implementation cannot be achieved through unilateral management or control by state bureaucracies or military or other forms of coercion.[95] Instead, these bureaucracies will have to become participants in a *complex network* of resource regimes, helping to coordinate among them, and encouraging the fostering the creation of large numbers of "mediating organizations" whose purpose is to act as a buffer and filter between local contexts and these bureaucracies. In a sense, the model of environmental protection and restoration suggested here consists of a consciously-developed system of multiple layers and actors.

To date, there has been only a modest amount of work undertaken to identify the elements necessary to the successful promulgation of international agreements (or regimes) having to do with environmental protection, or the architecture of the complex networks described above. Extensive research focused on the relationship between local social systems,

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[92] There is a growing literature on the importance of such groups in a local context. See, for example, David Korten, Getting to the 21st Century--Voluntary Action and the Global Agenda, West Hartford, Conn.: Kumarian Press, 1990; Alan B. During, Action at the Grassroots: Fighting Poverty and Environmental Decline, Washington, D.C.: Worldwatch Institute, Jan. 1989; Robin Broad, John Cavanagh, & Walden Bello, "Development: The Market is Not Enough," Foreign Policy 81 (Winter 1990-91):152-60.

[93] Informational brochure provided by WRI. See also the NGO Networker, published by WRI.

[94] Conversation with Frances Spivy-Weber, Director, UNCED U.S. Citizens Working Group on Forests, March 7, 1992.

[95] See, e.g., Nancy Peluso, "Coercing Conservation: The Politics of State Resource Control," In: Lipschutz & Conca, eds., op. cit.

environmental degradation, and resource management does exist,[96] but what is lacking is an understanding of the *institutional* requirements for "bridging" these two arenas. As noted earlier, much of the work focused on the conditions for implementation within countries deals with the state of domestic administrative and regulatory systems and sanctions, on the assumption that states possess the tools and capabilities (or can acquire them) to design and manage appropriate projects (an assumption that is largely unevaluated, but which evidence suggest is not always well-founded). The early research I describe here suggests a different approach to "institution building" and bridging, based on the premise that global environmental problems can be addressed successfully only if, in addition to the international and national elements, workable patterns of local control and management of environmental resources can be replicated simultaneously in many places. In other words, international agreements and arrangements must be designed so as to be connected to localities through networks of institutions possessing the necessary capabilities for organization, assistance, and implementation.

V. Concluding Thoughts

Some years ago, the U.S. Public Broadcasting Service televised a program called "After the Warming," hosted by James Burke. The program was intended to provide a view, 50 years hence, of the effects of global warming on human civilization. Needless to say, the dramatizations were impressive and effective, and the casual viewer came away with a conviction that something must be done. Burke suggested that the answer could only come with something along the lines of a "Global Administration for International Action," located, of course, in Tokyo, which would continually monitor all global environmental functions through a complex, computer-run Global Imaging-type system. GAIA would then send out directives to national authorities, ordering them to undertake such-and-such an action, which would, presumably, set aright whatever small deviation had been detected.[97]

The notion is alluring; the reality is quite something else. If we look at the other social system that seems global in extent--the market system, or capitalism--we have to note that, in many parts of the world, political fragmentation and resistance are the consequence.[98] Efforts to manage environmental degradation at a distance are already running into such resistance, and this should alert us to the need to rethink approaches to conserving, sustaining, and restoring what we call the "global environment."

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[96] Included among these are: Michael F. Maniates, Organizing for Rural Energy Development: Improved Cookstoves, Local Organizations, and the State in Gujurat, India, University of California, Berkeley, Energy & Resources Group, Ph.D. dissertation, 1990.

[97] All of this is vaguely evocative of such science fiction classics as E.M. Forester's "The Machine Stops."

[98] Two discussions of this notion can be found in "Post Fordism--Flexible Politics in the Age of Just-in-time Production," Socialist Review 91, #1 (Jan. 1991); and James Rosenau, Turbulence in World Politics, Princeton: Princeton University Press, 1990.