

ENVIRONMENTAL GOVERNANCE

Submitted to *Annual Review of Environment and Resources*

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Key Words co-governance, market, globalization, decentralization, climate change, ecosystem degradation

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Abstract: This article reviews the literature relevant to environmental governance in four domains of scholarship: globalization, decentralization, market and individual incentives-based governance and cross-scale governance. It argues that in view of the complexity and multi-scalar character of many of the most pressing environmental problems, conventional debates focused on “pure” modes of governance, where state or market actors play the leading role, fall short of the capacity needed to address them. The paper highlights emerging hybrid modes of governance across the state-market-community divisions: Co-Governance, Public- Private Partnerships and Social-Private Partnerships. It examines the significant promise they hold for coupled social and natural systems to recover from environmental degradation and change. We conclude with some of the critical problems to which hybrid forms of environmental governance are also subject.

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INTRODUCTION

The Millennium Ecosystem Assessment, perhaps the most ambitious and extensive examination of the state of the earth's ecosystems, outlines what might reasonably be expected to happen to them under different future scenarios (1). Its conclusions are pessimistic: the changes required to address the declining resilience of ecosystems are large and not currently under way. It ends with a discussion of the types of responses that can lead to sustainable management of ecosystems. Ostensibly, only the first of these focuses directly on institutions and governance—the subject of this paper. Others concern economics and incentives, social and behavioral factors, technology, knowledge and cognition, and decision-making processes. Although some of these other responses may seem unrelated to environmental governance, in reality the effectiveness of every single one of them depends on significant changes in existing strategies of environmental governance.

Our paper reviews the literature on environmental governance to examine how different approaches have attempted to address the most pressing environmental challenges of our time: global climate change, ecosystem degradation, and the like. We find that a significant proportion of this literature has tended to focus on a particular agent of environmental governance as being the most effective—typically the market, state actors and, more recently, local and community actors.

Today, a broad array of both pure and hybrid environmental governance strategies are being practiced. Our discussion examines the importance of spatial and institutional scales to environmental governance, focusing on emerging hybrid forms. Of significant interest to our review are soft governance strategies that try to align market and individual incentives with self-regulatory processes, and co-governance which is predicated on partnerships and notions of embedded autonomy across the state-society divide (2, 3). These innovations in environmental governance can potentially be extended to engage multiple types of environmental problems and conflicts.

DEFINING ENVIRONMENTAL GOVERNANCE

For the purposes of this paper, environmental governance is synonymous with interventions aiming at changes in environment-related incentives, knowledges, institutions, decision-making, and behaviors. More specifically, we use “environmental governance” to refer to the set of regulatory processes and organizations through which political actors influence environmental actions and outcomes. Key to different forms of environmental governance, therefore, are the political-economic relationships that institutions embody, and which shape identities, actions, and outcomes (4-6). International accords, national policies and legislation, local decision-making structures, transnational institutions, and environmental NGOs are all examples of the forms through which environmental governance takes place. Because governance can be shaped through non-organizational institutional mechanisms as well, for example when it is based on market incentives and self-regulatory processes, there is no escaping it for anyone concerned about environmental outcomes. Environmental governance is varied in form, critical in importance, and near ubiquitous in spread.

To investigate emerging trends in environmental governance in a way that is both sufficiently general for a review, and reflects ongoing changes in the world of governance, we focus on four themes around which some of the most interesting writings on environmental governance cluster. The following text first reviews the scholarship on globalization, decentralized environmental governance, market-and individual focused instruments and governance across scales to uncover how the conventional roles and capacities of important actors and institutions are getting reconfigured. This discussion leads us to a framework through which approaches to environmental governance and the terrain of environmental governance can usefully be explored. We apply insights from this framework to two sets of consequential environmental problems: global climate change and ecosystem degradation. We identify some of the limitations of hybrid forms of environmental governance, and conclude with a discussion of some of the implications of ongoing developments related to environmental governance.

THEMES IN ENVIRONMENTAL GOVERNANCE

Globalization and Environmental Governance (GEG)

Globalization implies an interconnected world across environments, societies and economies. Globalization is a fact of life. Indeed, because of its dynamic and multi-faceted nature, it is many facts of life! Multiplicity, diversity, interdependence, and flows of influence are common themes associated with globalization even if there is little agreement about its definition, implications, impacts, and even usefulness as a concept (7-10). (See (11-13) for definitions and implications of globalization).

From an environmental perspective, globalization produces both negative and positive pressures on governance. Economic globalization produces tremendous impacts on environmental processes at the local, regional, national and global level. By integrating far-flung markets, globalization may intensify the use and depletion of natural resources, increase waste production, and lead to a “race to the bottom” as capital moves globally to countries and locations that have less stringent environmental standards (14-17). Most free trade regimes—facilitated by and assisting globalization—provide limited or inadequate environmental provisions and insufficient safeguards for their enforcement (18-20). Analogously, despite evidence of the negative effect of international trade on carbon-dioxide emissions, it remains uncertain how economic provisions of trade agreements such as the WTO can meet the goals of climate regimes such as the Kyoto Protocol (15).

By broadening the range of problems national governments are called upon to address, globalization strains the resource basis of nation-states at the same time as it may contribute to socio-economic inequalities. These pressures can ultimately enhance levels of vulnerability to climate change and other environmental threats (21). Finally, neoliberal policy reforms associated with globalization may complicate the efficacy of state action by shifting power to alternative levels of decision-making through decentralization and privatization, and the use of market and agent-focused instruments (MAFI; see below).

Observers of globalization also argue in favor of its potentially positive impacts on economic equity and environmental standards through a virtuous circle and the diffusion of positive environmental policy initiatives. Clearly, the globalization of

environmental problems has also contributed to the creation and development of new global regimes, institutions, and organizations dedicated to environmental governance. More efficient use of technology, freer flow of information, and novel institutional arrangements based on public-private partnerships can each contribute positively to environmental governance (22, 23).

Globalization can also enhance the depth of participation and the diversity of actors shaping environmental governance. For instance, the globalization of social action expands the role of social movements so that they can produce deep social changes across national boundaries instead of being limited to negotiations with governments within a nation state. By introducing new ways of organizing, interacting, and influencing governmental processes, globalization can help increase the social and political relevance of non-state actors such as NGOs, transnational environmental networks and epistemic communities. And finally, more accessible and cheaper forms of communication improve access to knowledge and technology and enhance the rate of information exchange, speeding up the dissemination of both technological and policy innovations (22, 23).

The analytical argument for global environmental governance lies in the “public bads” implications of processes and outcomes related to environmental problems. Ozone depletion, carbon emissions, and climate change cannot be addressed by any single nation. Global cooperation and institutional arrangements are therefore necessary to address them. Historically, this conceptualization of environmental problems and their solutions meant that nation states were viewed as the appropriate agents of environmental action (24, 25) and international regimes as the appropriate governance mechanism.

Writings on international regimes have tended to cluster around two significant foci: understanding, measuring and comparing the effectiveness of regime performance (26, 27), and exposing their inherent democratic deficit (28). There are three main aspects to the democratic deficit of international environmental regimes. In many instances, countries participating in the negotiating process are themselves non-democracies. Second, limited participation from non-state actors (with the exception of large NGOs and at times epistemic communities), the unequal distribution of power, knowledge, and resources among the participant countries, and the ability of some powerful countries “to impose” their preferences on the process have undermined the ability of most participants to make much of an impact on final outcomes. Additionally, the opaque character of the negotiation process itself, strengthens the perception that international regimes and negotiations within the scope of multilateral organizations are driven by the more powerful actors (9, 27, 29). Finally, most international environmental agreements lack effective enforcement capacity against their more powerful actors, especially when the more binding provisions in an agreement are at stake (30, 31).

The failure of state-centered international regimes to address many of the most pressing global problems successfully prompted a search for new institutions, partnerships and governance mechanisms. A new global environmental governance paradigm that is more inclusive holds the promise not only of innovative governance strategies, but also of expanded cooperation among social actors that were previously outside the policy process: corporate interests, social movements, and non-governmental organizations. The fragmented nature of the sources of complex environmental problems such as global climate change, and the reluctance of nation-states to regulate the sources of these problems means that non-state actors and organizations may be able to play an

essential role in mobilizing public opinion and generating innovative solutions (32). It is for this reason that many scholars of environmental governance have proposed multi-level, non-hierarchical, information-rich, loose networks of institutions and actors as an alternative to ineffective international regimes (33-35).

These new international environmental governance mechanisms are viewed as being superior along a number of dimensions: a) integrating scientific, technological and lay knowledge and at quickly relaying information; b) providing sufficient redundancy and flexibility in functional performance; c) gaining the involvement of multiple actors; d) recognizing that the relationship between international regimes and non-state actors is fundamental to address economic and environmental changes; e) identifying modalities of cooperation that go beyond legal arrangements; f) working across scales to develop cooperation and synergy to solve common problems; and f) promoting social learning and compromise-seeking. However, they in turn may also be unable to limit the negative externalities emerging from their lack of implementation capacity. Their characteristic reliance on decentralized action and interdependent coordination, and their lack of instruments to deal with system disruption and unanticipated systemic effects mean that they may ultimately find it difficult to address major environmental problems directly and efficaciously (36, 37)

Decentralized Environmental Governance (DEG)

It may be correct to say that climate change, globalization, attendant socio-political shifts, and the challenges they pose for environmental processes have been the major concerns occupying many of the scholars who have written and talked about environmental governance. Indeed, for many interested in environmental governance, it is synonymous with what happens on the international or the global stage (38). However, it is at least equally correct that some of the most important contemporary changes in environmental governance are occurring at the subnational level, and relate to efforts to incorporate lower level administrative units and social groups better into formal processes of environmental governance. It is perhaps only a matter of historical record today, but the landscape of natural resource management has undergone a breathtaking shift since the colonial period and its immediate aftermath. Until as recently as the late 1970s and early 1980s, those concerned about loss of biodiversity, soil erosion, desertification, deforestation, decline of fisheries, and other such environmental phenomena used to call for more elaborate and thoroughgoing centralized control. Indeed, the elaborate forms of coercive control that marked governance arrangements for most natural resources continued with little change between the colonial and the postcolonial period. State bureaucratic authority appeared to many policy makers and academic observers as the appropriate means to address the externalities associated with the use of environmental resources. Centralized interventions were therefore essential to redress resulting market failures (39, 40) (for a review of relevant claims, see (41, 42)).

A loss of faith in the state as a reliable custodian of nature has accompanied the analogous loss of faith in states as effective managers of the economy (43, 44). The reasons for the shift away from centralized forms of governance also have to do, however, with very real forces of change, among them the fall of economies relying on centralized control. Economic pressures on states resulting both from greater integration of economic activities across national boundaries and a decline in aid flows have been

supplemented by fiscal crises in many developing countries (45). At the same time, as emerging economic forces have challenged the economic capacities of nation states, a shift toward more democratic political processes throughout much of the developing world has facilitated the move toward alternative forms of governance that rely on higher levels of participation and greater involvement of citizens into processes of governance.

In addition, extensive research by scholars of common property and political ecology emphasizing the capacity of communities and other small-scale social formations to manage resources have provided the intellectual grounds for a shift toward comanagement, community-based natural resource management, and environmental policy decentralizations (46-50). It did so by demonstrating that forms of effective environmental governance are not exhausted by terms such as state and free market institutions, and that users of resources are often able to self-organize and govern them. By identifying literally thousands of independent instances of enduring governance of resources, and at the same time highlighting arenas in which external support can improve local governance processes, scholars of common property and political ecology helped prepare the ground for decentralized environmental governance.

Since the mid-1980s, decentralization of authority to govern renewable resources such as forests, irrigation systems, and inland fisheries has gathered steam. Indeed, it has become a characteristic feature of late twentieth and early twenty-first century governance of renewable resources, even if non-renewable resources continue to be held by state authorities in a tightfisted grip (51-54). As Hutchcroft (55) suggests, "The decentralization of government functions is 'the latest fashion,' or at least 'a fashion of our time'" (56, 57). Three distinct justifications for decentralization of environmental governance are available. It can produce greater efficiencies because of competition among subnational units; it can bring decision-making closer to those affected by governance, thereby promoting higher participation and accountability; and finally, it can help decision-makers take advantage of more precise time- and place-specific knowledge regarding environmental resources.

National governments across the developing world have advanced strong claims about the imperative to establish and strengthen partnerships in which local administrative and organizational arrangements complement or substitute for more central efforts to govern environmental resources (58-60). In many cases, they have backed these claims with changes in renewable resource policies. Whether these changes have occurred because of the alleged advantages of decentralized governance or because of the significant flows of aid funds tied to decentralized governance is difficult to judge, but the shift in favor of decentralization has produced alternative means and new political claimants to the fore in the process of governance.

Indeed, the vast literature on decentralized environmental governance contains many different judgments regarding the nature and depth of the changes that have occurred since the 1980s. Positions adopted by the participants range from those for whom nothing much has changed (61, 62) to those who see the world of governance to have undergone a major transformation with decentralization (63-65). Much of the debate's heat is explained by the variations in the regional focus and the organizational affiliations of those involved. Because there is enormous patchiness and variation in the reforms different countries have undertaken, indeed even within countries in the case of federal policies, the geographical focus of analysis often leads to different conclusions

about the meaningfulness of institutional reforms (66). Similarly, those belonging to organizations involved actively in reforms tend to assess them more positively in comparison to outside observers and academic analysts.

When successful, decentralized governance of natural resources, can be seen as effecting at least three sets of changes in the political relationships through which human beings relate to resources (67). The first set of changes concern how decision-makers in lower level units in a territorial-administrative hierarchy relate to those at higher levels (68). Indeed, much of the existing literature on decentralized governance focuses precisely on this aspect of ongoing changes in subnational governance of the environment. A second set of issues related to the ways local decision-makers relate to their constituents with respect to environmental resources and services. This aspect of decentralization has been researched extensively in writings on local resource management, especially by scholars of the commons. However, a third aspect of decentralized governance—alterations of the subjective relationships of people with each other and with the environment as part of changing relationships of power and governance—is also crucial to understand the success of decentralized governance, an issue that has received far less attention than the preceding two aspects of governance (6).

Contemporary efforts at decentralized environmental governance, like those in earlier periods, aim at making the exercise of control both more thorough and more economical. Decentralization disperses multiple points of political leverage throughout an administrative structure, and makes them available to central decisionmakers (69, 70). It does so by encouraging the systematic creation of legal codes and performance standards that are specified through the exercise of legislative or executive authority, and adherence to which is the price of inclusion in decision-making processes. Paradoxically perhaps, decentralization appears to be perfectly compatible with the existence of centralized authority when formal inclusion in decision-making processes occurs together with a clear delineation of spheres of authority within which local actors are supposed to operate. In addition to helping affect fiscal economies, decentralization also serves political and strategic considerations to the extent to which dissatisfaction with governance can find local points of authority against which to protest rather than seeking to engage centralized authority.

But decentralized environmental governance is different from earlier attempts at decentralization of authority in two critical ways. For the most part, Indirect Rule and Community Development relied on existing authority structures and incorporated them into the formal process of the exercise of authority. In contrast, decentralized environmental governance, especially at the local level, has been built upon the manufacture of new organizational entities such as community-based user groups, and has established new lines of institutionalized authority. An even more striking difference that characterized contemporary environmental governance is the way it conceptualizes individual citizens and their responsibilities. By focusing on the incentives that prompt individuals to participate in new institutional arrangements to govern the environment, present day decentralization processes help produce the very individual subjects they require for their effective functioning. The rhetoric of capacity building, local knowledge, and individual rationality are lynchpins of decentralized environmental governance.

Ongoing changes in sub-national environmental governance hold intriguing possibilities for reshaping the future landscape of political decision-making related to the

environment. Thus, further research on environmental policy decentralization holds great promise both for furthering the insights that work on common property institutions has produced, and for enhancing the involvement of local decision-makers in new forms of environmental governance. At the same time, it is worth highlighting that ongoing changes are not just an occasion for optimism that less powerful human agents may come to exercise greater voice in how they and their resources are governed. There is also room for cynicism that decentralization policies have typically been motivated by powerful state actors to enhance their own political positions. Without effective safeguards against arbitrary exercise of localized power and clear relations of accountability, decentralization may lead to forms of regulation even more suffocating than those encouraged by more centralized control. The contingent outcomes of contemporary shifts in governance, therefore, depend crucially on the ways local actors mobilize and establish alliances across sociopolitical and administrative scales of governance (60).

Market and Agent-Focused Instruments (MAFI)

The decline of the state since the 1970s as the prime agent of environmental governance has also propelled market and voluntary incentives-based mechanisms to the fore. Instead of relying on hierarchically organized, regulatory control, or even purely participatory structures, market and agent-focused instruments aim to mobilize individual incentives in favor of environmentally positive outcomes through a careful calculation and modulation of costs and benefits associated with particular environmental strategies. They differ from more conventional regulatory mechanisms along a number of dimensions, including the source of their legitimacy and authority. Cashore (71) suggests that the strength of these instruments lies in their utilization of market exchanges and incentives to encourage environmental compliance.

MAFI encompass a broad range: eco-taxes and subsidies based on a mix of regulation and market incentives, voluntary agreements, certification and eco-labeling, and informational systems are some of the major examples. At the national level, the popularity of these instruments and frameworks has increased quickly, even if their adoption and implementation can be differentiated by sector and geography rather than being uniform (22, 72). Their popularity seems to relate both to a general dissatisfaction with “old” policy instruments, the influence, transfer and diffusion of emerging governance paradigms based in neoliberal institutionalism and free-trade agreements, and the need for market innovations that would keep national economies competitive in a globalizing world (22).

Energy taxes, tradable permits, voluntary agreements, and eco-labeling and certification were introduced as early as the 1960s in a number of western countries (22, 73). However, their adoption has gathered steam especially since the 1990s (23). These instruments are founded upon the bedrock of individual preferences and assumptions about self-interested behavior by economic agents. A strong claim advanced in their favor is their superiority in terms of economic efficiency related to implementation. Although an emerging literature focuses on the extent to which process-oriented evaluative criteria such as the popularity, responsiveness, legitimacy, transparency, and accountability may also be associated with market incentive-focused instruments, the extent to which they meet these criteria needs much greater exploration (35, 71).

Environmental taxes of different kinds are among the more common market-based instruments aiming to alter environmental actions of agents (by changing the costs and benefits of environmental choices). Over time, a number of countries have adopted a sophisticated mix of different kinds of eco-taxes, as well as distinct policy positions about how revenues generated from such taxes are to be allocated (22). Taxes on commodities and services such as energy, nutrients used in agriculture, or tourism are enacted in the belief that existing markets do not fully incorporate the externalities associated with the production and use of these commodities and services, and that taxes are an effective mechanism to raise revenues to offset damages associated with the overexploitation of under-priced resources. Tradable permits, similarly, are based on the idea that some ecosystem services such as clean water and air are not priced fully by existing markets. In such situations, incentives for conservation and economic efficiency of allocation can be improved through economic exchange only if appropriate legal and institutional arrangements are in place, and polluters pay a tax on their pollution-generating activities. The resulting markets for some kinds of emissions can reach significant proportions: the total value of trading in carbon markets, according to some recent estimates, may reach 10 to 40 billion dollars by 2010 (1).

Voluntary agreements are negotiated to meet environmental targets regarding, for example, lower waste generation and emissions or higher energy efficiency. Industry and corporate actors often pursue such voluntarily imposed targets as a strategy to preempt legal regulation. It can therefore be argued that the shadow of law is crucial to their emergence and effectiveness (74). Indeed, some researchers of voluntary environmental compliance have argued that without effective leadership by state agencies, environmental governance is likely to remain anemic at best (75).

Primary sector commodities such as coffee, timber, and energy provide familiar examples of eco-labeling and certification schemes (76-78). Both eco-labeling and certification schemes are a form of voluntary agreements where producers agree to meet environmental standards related to production and marketing activities. Such standards may be arrived upon as a result of work by third party actors, an industry association, or even the government. The operation of these schemes hinges upon the idea that consumers are willing to express their preferences related to clean energy or green products through their choices in markets, and a willingness to pay higher prices. Perceptions about environment-friendly preferences among consumers have led many corporations to adopt certification mechanisms and advertising campaigns that represent both real and cosmetic shifts in how corporate actors govern their environmental actions.

Some of the drivers of market-based policy instruments in the developed world are analogous to those motivating decentralized environmental governance in much of the developing world (79). Dissatisfaction with regulatory control by state agencies and the bureaucratization associated with their growth plays an important role in the expansion of the forms of market incentives based instruments, and their adoption across sectors and national boundaries (80). Difficulties in implementation of traditional regulatory efforts provide a partial explanation of the willingness of governments to experiment with market-oriented efforts. High costs of compliance with environmental regulations and increasing awareness of environmental issues among consumers are other parts of the explanation. Although many economists had argued for the economic superiority of market-based instruments as early as the mid-1960s and 1970s (81, 82), it

is only more recently that their application to environmental governance is becoming widespread.

The schematic review of a range of different instruments of environmental governance based in market incentives and exchanges suggests that their success depends significantly on the internalization of positive environment preferences among relevant stakeholders, most importantly citizens and consumers (83). For example, in their comparative study across eight EU countries Jordan et al. (22) found that among the constraints to the implementation of MAFI's was the opposition of environmental policy actors (especially environmental movements) and other vested interests such as energy-intensive industries. Other constraints to successful implementation are lack of expertise across policy systems, fear among corporate sectors about loss of economic competitiveness, and unequal distributional impacts as a result of eco-taxing schemes (e.g. fuel taxes). Not surprisingly, corporate and industry actors are less likely to adhere voluntarily to new environmental standards to the extent they prove more costly in comparison to a situation where such standards are absent or weak (84). Indeed, efforts to induce voluntary compliance by economically motivated actors have been found to be vulnerable to free riding behavior when effective mechanisms to deter free riding are not in place. For example, in a study of EPA's WasteWise program, Delmas and Keller (85) found that organizations joining the program were likely not to report their creation of waste unless there were private benefits they could get from such reporting.

Other research, especially that focusing on corporate social responsibility examines the extent to which environmentally oriented actions of market actors are tied to their expectations about consumer preferences – both those specific to their products, and “green preferences” more generally (86, 87). Citizen preferences expressed in the form of a greater willingness to purchase green products, and policy environments in which superior environmental outcomes are prized, are an important driver of the success of new market and agent-focused instruments of environmental governance. These considerations suggest that the growing popularity of market incentives-based instruments should not lead to the conclusion that governments are being replaced by governance. A conclusion more broadly supported by existing evidence would be that there is a complex relationship between governments and governance. Governments are the source of credible threats of regulatory action that would require costly compliance and which encourages the adoption of voluntary agreements on environmental standards. They also constitute the monitoring authority to which appeals regarding violations of environmental standards can be made.

Cross-Scale Environmental Governance (CEG)

The multi-scalar character of environmental problems—spatially, sociopolitically, and temporally—adds significant complexity to their governance (88). The implications of spatial scales for environmental governance are twofold. First, the decoupling across scales in the causes and consequences of environmental problems introduces major concerns about the unequal distribution of costs and benefits of environmental issues. For example, problems such as global climate change may have been caused primarily by the major producers of greenhouse gases in the developed world, but many of their more dramatic effects will negatively impact low emitting countries in the global south. The spatial distribution of environmental problems such as acid rain, ozone depletion, and

transboundary water pollution transcends national borders and adds to the challenge of designing and implementing solutions (89). As mentioned before, the main strategy to address these issues has been international environmental regimes. More than 1700 multilateral and bilateral environmental agreements have hitherto been signed; their effectiveness is at best mixed (27).

Socio-politically, cross-scale environmental problems affect and are affected by institutionalized decision-making at local, state, regional, national and transnational levels. A common prescription to address the multi-level character of environmental problems is to design governance mechanisms across levels of social and institutional aggregation. Multi-level governance is intended to counteract the fragmentation that is characteristic of sectorally based decision-making, or indeed, of decision-making that is organized by territorial, social, and political divisions. The involvement of public-private networks in multi-level governance is aimed to enhance the representation of the diversity of interests that may be affected by environmental problems (35, 90). At the same time, the configuration of cross-scale governance strategies is also conducive to compromise-seeking and social learning, often enabling less formal modes of decision-making, greater transparency and higher levels of representativeness (35).

Increasingly, cross-scale governance mechanisms are being shaped by non-state actors including non-governmental organizations (NGOs), transnational environmental organizations, intergovernmental organizations (IGOs), market-oriented actors (e.g. transnational companies, multilateral organizations, etc.), and epistemic communities or communities of knowledge (89, 91-95). These new actors both introduce innovative tools and mechanisms and positively shape power relations within the policy arena (28, 96) even if their transformative potential is contested (97).

The cross-temporal implications of environmental problems are especially severe because of two major obstacles to action: contempocentrism, and the uncertainty regarding cause and effect relationships where long term environmental changes are concerned. Contempocentrism, in part a consequence of high market discount rates, is the tendency to disregard the welfare of future generations and believe in the power of technology and technological change to take care of environmental degradation and scarcities. It means humans are likely to “spend” the environment now and discount the future heavily (30, 98). Coupled with the seeming high costs of action that will shift existing trajectories of economic development, the uncertainty surrounding the science of causes and effects of environmental degradation often leads to a “do nothing until we know more” attitude – strongly reflected in the contemporary policy positions of some nations that are the largest emitters of greenhouse gases. Many of the impacts of global climate change on humans and ecosystems are still undetermined, and the design and implementation of policies necessary to reduce emissions are both economically and politically quite costly.

THE TERRAIN OF ENVIRONMENTAL GOVERNANCE

The elaboration above of environmental governance-related changes and challenges related to four different themes shows that there are intriguing parallels across them despite the many (and expected) differences in how governance is getting reconfigured as a result of globalization and decentralization, and the increasing importance of cross-scale governance, market instruments, and individual incentives. Perhaps the most

obvious of these parallels relate to the emergence of alternative institutional forms of governance. Some of the new forms of governance are innovative hybrids between the conventionally recognized social roles that markets, states, and more recently, communities play. Figure 1 presents a schematic structure to classify strategies of environmental governance as they are founded upon the actions of three different social agents.

The triangle connecting states, markets, and communities constitutes the core of the figure. The emphasis in the figure on these social agents is a reflection of early conversations related to the environment that viewed environmental governance strategies as being especially necessary to address the externalities stemming from the public goods nature of environmental resources and processes. To overcome these externalities, some writers saw state action as necessary; other, surmising that externalities could lead to market failure advocated clearer definition of property rights to allow functioning markets to emerge (99, 100). Arguments advanced by scholars of the commons engaged these policy prescriptions and identified communities as a third potential locus of environmental governance (47). These efforts, championing states, markets, and communities, were built around perceived strengths of the particular social agency being considered: the capacity for action across jurisdictions backed by state authority; the mobilization of basic human incentives through market exchanges; and the deployment of solidaristic relationships and time- and place specific knowledge embodied in communities (101).

In the past decade and a half, however, an exciting array of research identifies opportunities for more nuanced arguments regarding hybrid forms of collaborations across the dividing lines represented by markets, states, and communities. The three major forms we identify in figure 1 – Co-Governance (between state agencies and communities), Public-Private Partnerships (between state agencies and market actors), and Social-Private Partnerships (between markets actors and communities) – each incorporate the joined action of at least two of the actors in the core triangle, and correspond to literally scores of specific experiments in which the constituent social actors find differing levels of emphasis. They simultaneously illustrate the dynamic and fast changing nature of contemporary environmental governance. The emergence of these hybrid forms of environmental governance is based upon the recognition that no single agent possesses the capabilities to address the multiple facets, interdependencies, and scales of environmental problems that may appear at first blush to be quite simple.

[Figure 1 here]

The hope embodied in hybrid mixed forms of environmental governance is evident in each case. They seek simultaneously to address the weaknesses of a particular social agent, and build upon the strength of the other partner. Thus, the involvement of market actors in environmental collaboration is typically aimed at addressing the inefficiencies of state action, often by injecting competitive pressures in the provision of environmental services. In the same vein, market actors are also viewed as enabling greater profitability in the utilization of environmental resources. The addition of community and local voices to environmental governance is seen as providing the benefit of time- and place-specific information that may help solve complex environmental

problems and at the same time, allowing a more equitable allocation of benefits from environmental assets. Higher levels of participation by different stakeholders and the blessings of state authorities can help overcome the democratic deficit and lack of legitimacy that is often associated with market focused instruments. And state actors, ostensibly, create the possibility that fragmented social action by decentralized communities and market actors can be made more coherent and simultaneously, more authoritative.

A second obvious parallel across the discussion of the different themes related to environmental governance is that within hybrid strategies, we can discern a mobilization of individual incentives that had initially been the core of market-oriented instruments and is now becoming increasingly common. Thus, contemporary co-governance strategies, in contrast to their historic counterparts, focus on how the individual subject will respond to efforts at governance. Through such a calculation of individual responses, decentralized environmental governance aims to elicit the willing cooperation of those subject to the goals of governance (6, 102). The emphasis on willing cooperation has even prompted some scholars of incentive-based governance strategies to term them “governance without government” (103) page 652).

In view of the extent to which an appeal to individual self interest is a part of new environmental governance strategies, it is reasonable to conclude that a pervasive attempt to restructure agent-level incentives and attitudes toward the environment underpins governance instruments related to civil society-based solidarities, market-based policies, and voluntary compliance mechanisms (104, 105). The same is true for public-private public and social-private partnerships, each of which is enabled by a level of valorization of corporate entities and market actors that would have been quite unimaginable in the 1970s (106-108). It would be no exaggeration to suggest that the logic of efficiency which is the hallmark of capitalist organization of production is also is coming to colonize the goal of environmental conservation and sustainable development.

LIMITATIONS OF HYBRID GOVERNANCE STRATEGIES

The reconfiguration of environmental governance so that the state is no longer the only actor viewed as capable of addressing environmental externalities has enormous implications, not all of which have found an easy acceptance among those concerned about environmental outcomes. The focus on individual incentives, the creation of new property rights and markets in relation to water or carbon, and the encouragement to the corporate sector insofar as the policy environment enables more extensive public-private and social-private partnerships have been construed by some scholars as moves toward increasing democratic deficit, and higher levels of inequality in the allocation of environmental resources. Those who are able to exercise greater access and expertise in relation to these new mechanisms are more likely to derive greater benefits from them (62). Other scholars have expressed significant concerns about the extent to which incorporation of market actors in a more thoroughgoing manner into environmental governance is likely to lead to which Liverman (109), among others, has called the commodification of nature. Greater efficiency in the utilization of natural resources, for many, is equivalent to higher rates of extraction, and thereby, brings up issues of intergenerational equity.

For others, especially those coming from a radical political economy perspective, there is no new approach to global environmental governance; rather, the supposed new mechanisms of governance are little more than a natural evolution of traditional regime politics because outsiders and disempowered groups continue to have little opportunity to participate in contemporary efforts at governance despite the greater incorporation of civil society actors (28). The key difference between models of new global environmental governance and older conceptions of regime theory is the role and importance accorded to members of global civil society—understood as a sphere of voluntary societal associations located above the individual and below the state as well as across state boundaries (28, 92). However, Ford (28) argues that the rhetoric of societal participation introduced by the Brundtland Report did little to affect regime politics since it failed to democratize the negotiation process itself. New forms of global environmental governance, therefore, can be viewed simply as reflecting existing distribution of power despite the incorporation of new players, not as having changed anything fundamental. Indeed global environmental governance is seen as being embedded in a neoliberal political economy, which is hegemonic in the neo-Gramscian sense that dominant power relations are maintained by consent as well as coercion (28). In this sense, global environmental governance is allegedly part of a broader agenda of corporate interests developed to promote economic globalization and to regulate what both NGOs and nation-states do (110). In a world of weak states, deterritorialized action, and concentrated power, corporate interests and multilateral organizations can control and re-frame environmental action as a means to legitimize their model of development (111). These dominant interests place greater weight on the problem-solving aspect of new instruments rather than on ameliorating the unequal power relations that the “new” system also continues to preserve. In this view, actors who are mostly responsible for its degradation are defining the terms of environmental protection. “Governance from below” represented by the role of social movements and protests against organizations such as TNCs, the WTO and IMF are currently the only recognizable challenge, despite the risk that they too may be coopted (111).

In the case of horizontal governance networks including a wider array of social actors such as private and corporate interests, a major argument in their favor is the need to guarantee that veto players, whose “voice” or “exit” can jeopardize public action, agree with policy choices. Here, if these elite actors are provided with a privileged space for participation they will have no incentive to exert their veto power or obstruct the decision-making process. The rationale behind the legitimacy of horizontal networks is that they work and that the outcome justifies compromise for the “greater good”. However this is hardly a justification for legitimacy (35). Moreover, the mere inclusion of more social actors does not necessarily make governance systems more democratic (112). On their part, advocates of new forms of governance argue that even if these approaches are characterized by a democratic deficit, they are no worse than traditional representative democracy (35). Still critics point out that they fail to meet normative models of deliberative democracy whose fairness is grounded on the equal participation of all stakeholders. Finally, the opacity of governance networks may prevent the mass public from identifying and evaluating the role of specific agents such as experts who play prominent roles in the building of relevant issues and action agendas. For example, in cases of environmental problems with potential catastrophic impacts (e.g. global

climate change) the predominance of “less than democratic” expert politics is justified in name of the urgency and severity of the problem.

Another problem with MAFI and multi-level governance frameworks concerns their effects on policy capacity, specifically in relation to environmental problems. In multi-level governance systems, the role of the nation state is reconfigured in that the “denationalization” of statehood, reflected empirically in the “hollowing out” of the national state apparatus, has reorganized old and new capacities territorially and functionally (113). Indeed, globalization and sub-national challenges have led to the emergence of a re-scaled state that simultaneously transfers power upwards to supra-national agencies and downwards towards regional and local levels (114), changing the way policymaking capacity is distributed. This transfer of power to different levels of decision-making may have already affected policy capacity of the modern state negatively (115). Hybrid modes of environmental governance and emerging partnerships across conventional divisions suggest that the state is neither the only one and perhaps not even the most important partner in governance (113). Yet, advocates of a bigger role for the state contend that, especially in cases where redistributive policy making becomes necessary (e.g. adaptation), it is unlikely that either the market or hybrid forms of governance will be able to accomplish it (116).

APPLICATIONS: CLIMATE CHANGE AND ECOSYSTEM DEGRADATION

Climate Change

Among the factors that challenge environmental governance structures, climate change promises to be one of the most critical. As the need to design policies to respond to the negative impacts of climate change increases, more attention has been paid to emerging modes of environmental governance how they can increase the capacity of economic, social, and cultural systems to help humans mitigate and adapt to climatic change. Considering that climate is one of many stressors, the resilience of already overextended economic, political and administrative institutions may decrease rapidly, especially in the more impoverished regions of the globe (21). Some signs of how environmental stresses may exacerbate governance challenges related to poverty, violence, and authoritarianism are already visible. Among expected casualties of governance breakdown as a result of climate change may be economic growth, democratic institutions, and sustainable livelihood conditions for many.

Responses to global climate change fall broadly into two main categories: those seeking to curb or stabilize the level of emissions of greenhouse gases into the atmosphere (mitigation) and those seeking to boost natural and human systems resilience to prevent, respond and recover from potential impacts of a changing climate (adaptation). Although at this point adaptation may be inevitable, its magnitude and range depends on how much mitigation is successfully implemented so as to prevent and avoid the most dangerous interference in the climate regime

Many of the factors that make global climate change unique also make it complex. Global climate change is the quintessential multi-scalar environmental problem: because greenhouse gases mix equally in the atmosphere, the costs of the negative effects of climate change are socialized at the global level but the effects are likely to be felt at

the local level. The fragmented and highly politicized nature of the causes of climate change means that it is extremely difficult to assign blame and target offenders. Effective responses to climate change are likely to require a diversity of actors and organizations across the state-society divide. The high level of uncertainty still involving the definition of the magnitude and character of the impacts of climate change in different human and natural systems and the fact they might not be felt for years, also make it a politically and financially costly problem (30). Finally, the disconnection between those causing climate change (large producers of greenhouse gases) and those likely to be more negatively affected by it, including the global poor and natural and biological systems, makes it unique in terms of the distribution of costs and benefits and brings up a whole host of equity and environmental justice questions (117). As a result, policy action related to mitigation of and adaptation to climate change is likely to fall on markedly different groups of actors and institutions across the global governance spectrum. For example, while mitigation action is likely to fall upon countries and sectors mostly responsible for the production of greenhouse gases such as polluting corporations and developed countries, adaptation will be mostly realized by affected groups such as the poor living in less developed countries or agencies entrusted with the task of building generic adaptive capacity to climate change such as NGOs and aid organizations. On the one hand, in the burgeoning literature on adaptation, most efforts to compare differential vulnerability identify already stressed countries and regions in Africa and South Asia and small island states as the most vulnerable (118, 119). On the other hand, in the context of international regimes to curb greenhouse gases emissions, such as the Kyoto and Montreal protocols, the primary burden of mitigation falls on developed countries and GHG producers (120, 121).

Mitigation

The IPCC defines mitigation of GCC as “an anthropogenic intervention to reduce the sources or enhance the sinks of greenhouse gases” (122). Mitigation of GHG emissions has primarily been organized at the international level through the entering into force of the Kyoto Protocol and realized at the national level through regulation and implementation of new governance mechanisms across the public-private divide. Mechanisms to mitigate global climate change range from technological fixes to the design of institutions that curb carbon emission practices. Five categories of strategies to mitigate carbon emissions are available: energy conservation, renewable energy, enhanced natural sinks, nuclear energy, and fossil carbon management. Yet the magnitude, complexity and urgency of the climate change problem suggest that the implementation of any or of a combination of these strategies would require tremendous amounts of financial, human and political capital (123).

Not surprisingly, the lack of capacity of nation-states implement such strategies (exemplified by the lackluster accomplishments of Kyoto so far)—and the generalized lack of confidence that this capacity will build dramatically in the near future—suggests that a broader array of hybrid modes of governance is necessary to address global climate change. Co-governance and Public-Private Partnerships in the implementation of Kyoto’s Clean Development Mechanism and Social-Private Partnerships to develop community based carbon sequestration projects are a promising start (124, 125). Carbon taxes and joint development of fuel-efficient technology (e.g. FreedomCar, California Fuel Cell

Partnership) are also examples of initiatives involving both public and private actors. Yet, despite the promise of effectiveness of hybrid modes of governance, many question their ability to address mitigation as fast and as broadly as necessary to defuse many of the most negative impacts of global climate change.

Already, in the implementation of mitigation policy, NGOs and business have played a particularly important role both in influencing the design and implementation of climate governance mechanisms. While business interests have mostly focused on flexible mechanisms for carbon trading (see section on market based mechanisms) and the pursue of fuel efficiency (besides also playing an oppositional role to the implementation of emission curbing strategies), NGOs have played a broader role in monitoring implementation and compliance of regulation, lobbying, raising equity issues, and providing scientific and technical knowledge (31, 121, 126, 127). One of the most effective ways NGOs have influenced the global climate change policy process has been through their role as knowledge producers as members of information networks and epistemic communities seeking to affect the response process.

Adaptation:

The IPCC defines adaptation as “the degree to which a system is susceptible to, or unable to cope with, adverse effects of climate change, including climate variability and extremes. Vulnerability in turn is “a function of the character, magnitude, and rate of climate variation to which a system is exposed, its sensitivity, and its adaptive capacity.” (122). Adaptive capacity, the third concept important to understand vulnerability to global climate change, is the “potential and capability to change to a more desirable state in the face of the impacts or risks of climate change” (128). It is the ability of a system to adjust to climate change and to moderate GCC-related damages. It takes into consideration the entitlements, assets and resources inherent to a system that improve its ability to resist, cope and recover from a given hazard.

In contrast to mitigation policy, building adaptive capacity has been mostly defined at the national scale both because it is the appropriate level to make policy decisions and because it allows for comparison of vulnerability across countries (118). Similarly to mitigation policy, the reality of building adaptive capacity involves cascading decisions across scales and a diversity of private and public agents and organizations (129). However, because of the redistributive character of adaptive capacity building, the bulk action is expected to fall over nation-states (21).

At the local level, GCC critically intersects with decentralization not only in the assessment of different levels of vulnerability within countries but also in the design of policy to enhance adaptive capacity. Vulnerability assessment (e.g. participatory vulnerability mapping) holds the promise of a more accurate understanding of the “character” of the vulnerability of specific social and human systems (130). At the global level, the main implication to adaptation policy refers to the role that institutions such as the UNFCCC play in coordinating international action and advancing rationales for compensation and preparation for future impacts (117).

The panoply of governance strategies related to global climate change are clearly difficult to view as being centered on any single social agent as depicted in figure 1. Although it might have been argued a decade ago that nation states are the only actors who can generate effective measures that will address climate change, it is evident that

even if their involvement is necessary to deal with climate change, they are not adequate to the task by themselves. The willing cooperation of civil society and market actors and changes in individual level actions are critically important to the successful implementation of the set of governance strategies that might have some prospect of being effective.

Ecosystem Degradation

Like climate change, ongoing and fundamental alterations of the relationship between humans and ecosystems pose a complex set of challenges for environmental governance. Ecosystems and their services are the basis upon which human lives and all human actions are founded it is not surprising that when examining human impacts on the environment, the Millennium Assessment focused on ecosystem services. In this section, we draw upon this comprehensive assessment of ecosystems to pursue our arguments about changing forms of environmental governance. The MEA (1) categorized the range of benefits available to humans from ecosystems into “*provisioning services* such as food, water, timber, and fiber; *regulating services* that affect climate, floods, disease, wastes, and water quality; *cultural services* that provide recreational, aesthetic, and spiritual benefits; and *supporting services* such as soil formation, photosynthesis, and nutrient cycling.” The Assessment concludes that humans have altered ecosystem services more comprehensively in the past half century than at any previous comparable period. Although these alterations in the relationships between humans and ecosystems have led to substantial net gains in economic development and well-being, 60 percent of ecosystem services are being degraded or used unsustainably. Not only are current use and management patterns unsustainable, they are increasing the likelihood of non-linear and irreversible changes such as disease emergence, fisheries collapse, alterations in water quality, and regional climate shifts. Finally, the costs of ongoing changes are being borne disproportionately by the poor, thereby contributing to growing disparities (1).

To address these changes, the Assessment evaluates a range of potential responses, and focuses especially on those that would a) lead to institutional changes and governance patterns that can manage ecosystems effectively, b) align market incentives better with the real costs of environmental services, c) focus on particular social behavioral obstacles to better utilization of ecosystems, d) promote more efficient technologies, e) provide better knowledge about what is happening to ecosystems; and f) improve the efficacy of environment-related decision-making. Throughout the discussion of these responses, it is evident that the authors of the Assessment simultaneously define the terrain of environmental governance quite narrowly, and extremely broadly. On the one hand, they identify a specific set of responses – those having to do with institutional and governance-related changes – as properly the domain of environmental governance. Such responses would include the integration of ecosystem goals into existing sectoral strategies – for example, in the Poverty Reduction Strategies encouraged by the World Bank; increased emphasis on international environmental agreements and target setting, and greater accountability of environmental-decision-making.

But they treat environmental governance too narrowly in restricting its scope to specifically institutional responses. In fact, the entire set of responses they identify in relation to markets, social behaviors, technological innovation, and monitoring capacity is contingent on changes in governance. Indeed, without comprehensive changes in

contemporary national policies, the basis on which market exchanges are organized, and the incentives on which individual act, there is little reason to think that the real costs of negative environmental outcomes will be incorporated into economic decision-making. Similar arguments are not difficult to advance in relation to desired technological change social behaviors, or cultural processes. Although we may, in part as a result of a particular division of social-scientific labors, view the world as being divided into economic, social, political, and cultural domains, shifts in human actions in all of these domains require a reconfiguration of the costs and benefits of given actions; in the absence of changes introduced through shifts in governance patterns, there is little likelihood that humans will change their economic, political, social, or cultural behaviors – until perhaps it is too late.

Precisely because of the social interconnections across what we view as local, regional, national and global levels and what we categorize as the economic, political, social, and cultural domains, successful environmental governance strategies will require heightened cooperation of many different actors across these levels and domains. Thus, not only is it the case that human being will be able to introduce manageable changes in ecosystems only through significant transformations in environmental governance strategies, it is also very likely that successful outcomes will hinge on environmental governance approaches that are founded upon heightened cooperation involving all three social agents identified in figure 1: market, state, and community actors.

CONCLUSION

Our review of the changing terrain of environmental governance has emphasized the hybrid, multi-level, and cross-sectoral nature of emerging forms of governance. In particular, we have highlighted how environmental governance has changed since the 1960s. From a focus on particular agents of changes such as state and market actors, advocates of effective environmental management came to view communities and local institutions as important actors to involve in the process of governance in the 1980s, and early 1990s. Especially in the past decade and a half, a whole new set of instruments of environmental governance have emerged. We identify three broad set of terms that denote these partnerships: Co-Governance as the form of collaboration between state agencies and communities, Public-Private Partnerships between market actors and state agencies, and Social-Private Partnerships between market and actors and communities.

The new forms of environmental governance that have become increasingly popular since the mid-1990s rely on the one hand on partnerships, but on the other hand, they also depend upon and aim to mobilize individual incentives in the favor of environmentally positive outcomes in a manner that is characteristic of market-based instruments of environmental regulation. Because they seek to gain the willing participation of a whole range of actors who would be subject to their regulatory effects, they are viewed by many observers as being more efficiently implementable.

Greater efficiency in design and implementation of environmental governance instruments is undoubtedly a major concern of state authorities who may be under fiscal pressures and who may therefore find partnerships with market actors highly desirable. A partnership with private actors may also appear attractive to civil society actors and communities historically strapped for funding. Nonetheless, a number of observers of changing environmental governance have raised concerns about the degree to which

increasing recourse to market actors and processes undermines social goals related to higher levels of democratic participation, creates problems of unequal access to resources, and raises the specter of lack of accountability.

Valid concerns about the unanticipated consequences of emerging forms of environmental governance have also been expressed. Especially important is the possibility that greater efficiency in environmental governance, especially where natural resources are concerned, may be bought only through increasing commodification of nature. The fact that human interventions in ecosystem processes are already leading to unsustainable use of more than sixty percent of ecosystems, suggest that together with greater efficiency it is equally necessary to work toward greater restraint in human use of major ecosystems. The mobilization of individual incentives and their incorporation into innovative strategies of environmental governance is clearly necessary for efficient governance. But effective environmental governance also requires a proper recognition of the costs of over-exploited environmental systems, and the incorporation of these costs into policy changes that shape individual incentives.

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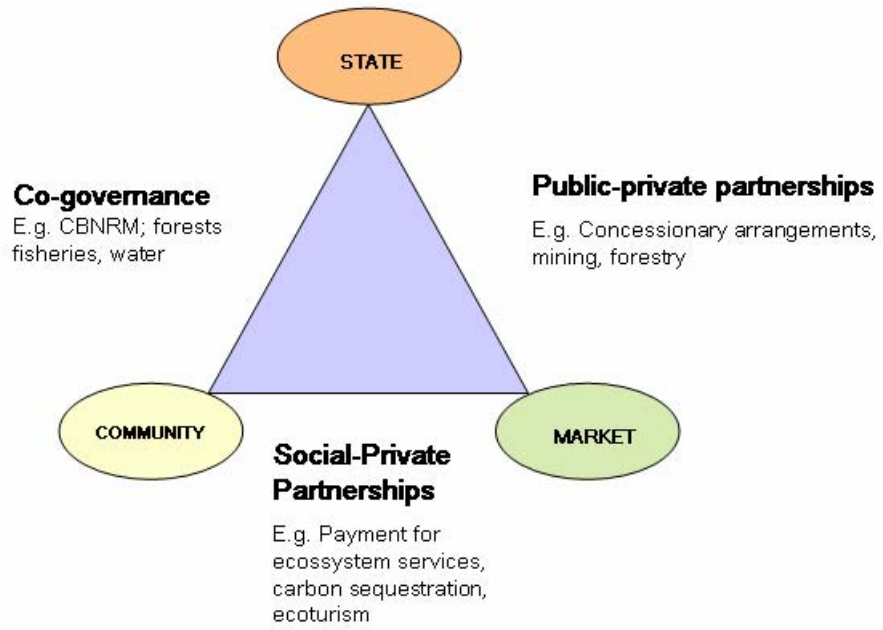


Figure 1: Environmental Governance