



institut du développement durable et des relations internationales – 6, rue du Général Clergerie – 75116 Paris – France – Tél. : 01 53 70 22 35 – iddri@iddri.org – www.iddri.org

idées
POUR LE DÉBAT

N° 08/2004 | GOUVERNANCE MONDIALE

Articulation between the various levels of government

Daniel C. Esty (Yale University, USA)

Daniel C. Esty a présenté cette communication lors de la conférence « Gouvernance internationale de l'environnement » co-organisé par l'Iddri et

l'UICN les 15 et 16 mars 2004 à Paris.

Ce texte n'engage que son auteur. En mettant ce document en ligne sur son site, l'Iddri a

pour objectif de diffuser des travaux qu'il juge intéressants pour alimenter le débat.

Tous droits réservés

DRAFT VERSION



Articulation Between the Various Levels of Government

Daniel C. Esty
Yale University, USA

October 2004

With the support of France's Ministry of Ecology and Sustainable Development

Institut du développement durable et des relations internationales
6, rue Général Clergerie
75116 Paris, France
Phone : 33 (0)1 53 70 22 35 - iddri@iddri.org

IDDRI (Institute for sustainable development and international relations) is a policy research institute based in Paris. It is supported by French research institutions, business, NGOs, as well as the French government. IDDRI has been created as a forum for debate, and a network, where stakeholders public administrations, the scientific community, NGOs, the private sector meet to define issues requiring new research, debate and to identify consensus and diverging opinions, thereby creating a common culture.

IDDRI works on major governance issues related to sustainable development, in collaboration with international research networks.

As part of the debate on international environmental governance, the IDDRI, is co-ordinating a series of studies commissioned to international experts. This series of studies looks at various facets of international environmental governance identified during the conference which IDDRI organised on this theme in March 2004 in Paris. The purpose of this exercise is to provide the working groups with some background information in the context of France's initiative to initiate discussions around the creation of a United Nations Environmental Organisation.

The series of reports will deal with the following themes:

- Issues raised by the international environmental governance system
- Mobilisation, diffusion and use of scientific expertise
- Observation system and alert
- Mechanisms to monitor member states' commitments
- Articulation between the various levels of government
- Role of the stake-holders
- Implication of a UNEO for the global architecture of the international environmental governance system
- Financing for environment and development

Project manager : Benoît Martimort-Asso – benoit.martimort-asso@iddri.org

Author

Dan C. Esty Director Yale Center for Environmental Law & Policy Sage Hall 205 Prospect Street New Haven, CT USA daniel.esty@yale.edu www.yale.edu/envirocenter

*The views expressed in this document are those of the authors
and do not necessarily reflect the views of the institution they to which belong.*

© Iddri, 2004

Table of content

Introduction	4
Environmental Governance in Theory and Practice	4
The Logic of Public Goods.....	5
Optimal Environmental Area Theory	6
Further Challenges: Legitimacy, Efficiency and Equity.....	8
Regional Solutions to the Public Goods Problem	9
The Logic of Multi-Tier Governance	9
Rethinking the International Environmental Regime	10

Introduction

1. Environmental problems exist on a variety of geographic scales from highly localized issues such as toxic exposures to entirely global concerns such as climate change. Policy efforts to respond to these problems “environmental governance” must also operate at multiple scales. This paper explains the logic of a multi-tier environmental governance structure which provides pollution control and natural resource management at the local, state/provincial/departmental, national, and international levels and at the “regional” level as well. It also offers a starting point for understanding why and how the international dimension of this structure, covering both global environmental governance and regional bodies, might be strengthened.

Environmental Governance in Theory and Practice

2. The various tiers of the existing environmental governance system are unevenly developed. While most industrialized countries (and developing countries to the extent their limited resources permit) have some mix of national and sub-national environmental efforts and initiatives, the international dimension of environmental governance is much more modest. In the United States, for example, the federal government spends about \$30 billion per year on its many national-scale environmental programs. The fifty states together spend a total of nearly \$30 billion annually. And city and town authorities have dramatically increased environmental spending at the municipal level so that local environmental governance initiatives and efforts are now approaching \$30 billion per year. In contrast, the UN Environment Programme (UNEP) annual budget is about \$60 million. This radical mismatch in resources provides one measure of how underdeveloped the international environmental regime is.

3. Of course, there are additional international environmental efforts carried out by other bodies including the World Bank, the United Nations Development Programme (UNDP), the UN Commission on Sustainable Development (CSD), the World Meteorological Organization (WMO), the International Oceanographic Commission (IOC), and the UN Food and Agriculture Organization (FAO) as well as numerous treaty secretariats including those supporting the Framework Convention on Climate Change, the Basel Convention (on trade in waste), the Vienna Convention and Montreal Protocol (addressing chlorofluorocarbons (CFCs) and other ozone layer depleting chemicals) and the Convention on Biological Diversity. There are also a number of entities with environmental programs operating at the regional scale on the international scene including the various economic commissions of the United Nations, the regional seas program of UNEP and various regional programs of FAO – and modest environmental programs under the auspices of Mercosur (the Southern Cone Free Trade Agreement), the Association of South East Asian Nations (ASEAN) and the Asia-Pacific Economic Cooperation (APEC) forum. Finally, there are a number of regional environmental bodies such as the Copenhagen-based Environmental Agency of the European Union and the Montreal-based North American Commission for Environmental Cooperation set up by Canada, Mexico, and the United States to address environmental issues that might arise from the economic integration anticipated under the North American Free Trade Agreement (NAFTA). But the sum total of these efforts is small in comparison to the responsibilities, authority, and resources lodged at that national and sub-national scales across the world.

4. This distribution of environmental attention and effort cannot be squared with ecological reality. Specifically, there exists a set of environmental problems that are inescapably transboundary in their scope. Some problems span two countries, requiring bilateral cooperation to address the harm in question. Sulfur dioxide emissions from the United States spill into Canada causing acid rain across the border. Similar transboundary acid rain problems link Poland and Sweden as well as China and Japan. To address the acidification of forests, lakes, and buildings, the paired countries must find some way to work together. In other circumstances, a number of countries share a natural resource and need to work collaboratively to ensure optimal results from an environmental perspective. Thus, the nine countries through which the Danube River flows must work together to ensure that upstream nations do not pollute downstream ones and that water levels remain adequate along the river's full course. Similarly, many of the world's fisheries are regional in scope, meaning that a group of countries must work together to avoid depleted fishing stocks. In all these cases, failure to cooperate has a high price. For instance, the inability of the countries landing cod in the North Atlantic to cooperate on a program to ensure sustainable fish yields has resulted in a collapsed fishery.

5. Other problems are inherently global in scope. CFCs and related chemicals threaten the earth's protective ozone layer. Because these chemicals blanket the earth, where the emissions originate does not matter. CFC releases from any one country cause harm to every other country on the planet. In such cases, no single country acting alone can solve the problem. Unilateral action is inevitably inadequate. Thus, if New Zealand eliminated all CFCs and related emissions, but other nations continued to emit these chemicals, the ozone layer – including the part above New Zealand – would continue to thin. The result would be ongoing agricultural damage and public health threats (increased risk of cataracts, skin cancer, etc.) to New Zealand as well as every other country. Global cooperation to phase out the production and ultimately the use of CFCs was – and is -- the only way to respond adequately to this problem of worldwide scope.

6. Greenhouse gas emissions resulting in climate change and the loss of the planet's biological diversity represent other issues that are inescapably global in scale. As with ozone layer depletion, such worldwide problems cannot be dealt with by countries acting unilaterally. Success requires multilateral cooperation and a universal (or nearly universal) response strategy.

7. Not only have international problems received limited attention and even more limited resources from the nations of the world, there has been little effort to think systematically about what problems should be assigned to which authorities and bodies. That UNEP has almost no role in addressing climate change is a function of accident rather than any systematic design. Nor has much attention been given to the functional strengths that international environmental organizations would need to perform particular roles. Some academics have begun to fill this void (Esty and Ivanova 2002; Biermann and Bauer 2004), but the discussion among policymakers has been highly circumscribed. The following section offers a first pass at defining the proper role for international as opposed to national environmental governance – and articulating which issues should be handled globally and which might best be addressed at a regional scale.

The Logic of Public Goods

8. It is a well established principle that public goods need to be provided at the scale of the issue to which they are addressed (Olson 1965; Tullock 1969; Buchanan and Tullock 1971). In this regard, environmental protection needs to be provided at the geographic scope of the problem in question (Baumol and Oates 1988). Others have noted that successful policy interventions must be consistent with the “logic of collective action,” which requires governmental jurisdiction or authority at a scale sufficient to mobilize those affected by the policy intervention (Olson 1965; Vogler 1995).

9. In the environmental realm, this “matching principle” argues for a multi-tier governance structure to the extent that problems arise at a variety of scales (Butler and Macey 1996). Solving the collective action problem generally requires an over-arching sovereign who can organize the provision of the requisite public goods at the appropriate scale – and enforce participation and financial contributions by all those parties who will benefit from the public good (Olson 1965). This logic would seem to demand “governance” at an international level for global public goods (Kaul, et al. 1999).

10. Without an over-achieving sovereign to enforce across-the-board participation in the provision of a public good, there exists a tendency for some participants in a collaborative process to shirk and fail to contribute to the joint effort. From any one country's perspective, such “free riding” has a logic: if others will pay for shared environmental protection, why contribute? Free riding is a logical outcome of the “tragedy of the commons” dynamic that emerges where common resources need to be managed or public goods need to be produced, and there is no authority to ensure cooperation. It is this very tendency to pursue narrowly defined self-interest at the expense of optimal outcomes from a community perspective to which governance is the answer.

11. More generally, unless all cost-bearers and beneficiaries of a public good are encompassed within the jurisdiction of the authority taking action, there is likely to be a structural failure in organizing an adequate response. This governance failure means that the public good will be provided at a sub-optimal level. Thus, if pollution spills beyond the borders of a regulatory authority, environmental protection is likely to be under-provided (Hardin 1968; Cooper 1994). This result is a function of the distribution of the costs and benefits of governmental intervention (Elliot, Ackerman, and Millian 1985). The fact that some of the costs of inaction (unabated pollution) are “externalized” falling beyond the borders of the jurisdiction

providing environmental protection means the authorities may well ignore these harms, leading to sub-optimal levels of the public good (pollution control). Full cost internalization is thus easiest to ensure if governmental intervention occurs at the scale of the harm involved. In the international context, this may entail global governance or regional governance to promote cooperation across jurisdictions.

12. But Ostrom (1990) and others (Haas, et al. 1993) have demonstrated that cooperation can be achieved among separate jurisdictions under some circumstances even in the absence of an over-arching structure of governance. In particular, if parties recognize their interdependence and see the benefits of cooperation, they may find ways to connect national scale (or even smaller scale) efforts to achieve a common outcome that is superior to non-cooperation. Game theoreticians have also demonstrated the collaboration can be achieved under conditions that might otherwise lead to a prisoner's dilemma lose-lose Nash equilibrium if certain assumptions hold. Notably, if the parties recognize their reciprocal positions or understand that they are playing a "repeat game," they may be able to work together to achieve an optimal outcome that maximizes social welfare. The collaboration thus achieved can, however, be understood as the product of "governance" no matter that it does not entail a unified policymaking body.

13. Even if the logic of collective action is recognized, successful governance and optimal policy results become more difficult to achieve as harms become larger in scale and encompass more disparate and diverse jurisdictions. Indeed, environmental problems that span multiple countries present challenges that are much greater than those that fall within a single political entity. Dua and Esty (1997) call such transboundary pollution spillovers or natural resource management challenges "super externalities." These super externalities are especially hard to deal with because, in the international context, there is no established political process (i.e., a legislature to pass laws), nor a unified executive with police power to enforce the laws, nor a judiciary that is positioned to interpret rules and regulations and to settle disputes across the entire area of the initiative.

14. International environmental governance therefore requires special efforts to achieve the requisite cooperation across jurisdictions (Barrett 2003). As Esty and Mendelsohn (1998) have demonstrated, international environmental cooperation is only likely where a problem presents big risks that are widely recognized (which translates into clear collective action benefits). Absent such sizable and demonstrable welfare gains from cooperation, countries will be reluctant to contribute financial resources and to relinquish national-scale control and sovereignty. And even if the potential benefits of collaboration are evident, countries will not continue to cooperate if they see others "free riding" and failing to carry a fair share of the collective burden. Whether the necessary collaboration ultimately emerges as a function of joint national initiatives or as a unified set of activities undertaken in the name of an international treaty, these special governance challenges must be addressed whenever action is required at the international scale.

Optimal Environmental Area Theory

15. The challenge of providing an optimal structure of international environmental governance is exacerbated by the fact that the scale of many environmental problems does not match that of political jurisdictions. Natural resources are often shared across political boundaries and pollution harms often spill across borders. Thus, a polluted river needs to be managed on a watershed basis that involves all the jurisdictions affected. And an air pollution problem needs to be addressed by all of those who are affected either as sources of the harm or as victims of the emissions. The disconnect between the geography of environmental harms and political geography therefore requires a substantial number of inter-jurisdictional efforts.

16. In an ideal world, the governance process for each harm would match the scope of that issue. But, given the almost infinite array of scales in which environmental problems arise, this logic would entail a nearly infinite set of levels of environmental governance (Esty and Dua 1997). It is, however, administratively inefficient to have governance structures at every level that might be required by the physical scale of some issue. A limited number of governmental levels are therefore required. Within most countries, this has resulted in some problems being handled at the local level. Other issues get addressed at a regional/provincial/state/departmental level. And some larger-scale problems are taken up by national authorities. On the international scale, a similar set of two or three governance levels would likely make sense.

17. Some number of problems are probably best addressed on a bilateral basis where just two countries are involved. Other problems may need to be addressed on a regional basis drawing in three or more countries that share connections through the issue in question. And finally, there is likely to be some number of issues that will have to be addressed at the global scale.

18. The optimal environmental area for governance is further complicated by the fact that every environmental policy problem involves sub-activities that might be best handled at a scale other than the physical scale of the problem in question (Esty 1999). For example, while acid rain might well involve two neighboring countries, implying a bilateral governance regime, understanding the affects of acidification might well entail analytic activities that are best undertaken with a high degree of collaboration across all countries in the world. Indeed, in cases where the science of a problem (e.g., the human dose response when affected by a particular pollutant) does not change across countries, there is a strong argument, at least, for sharing information on a global scale. As a general rule, where an activity – problem identification, epidemiological or ecological analysis, cost-benefit calculations, policy option development, etc. – shows economies of scale, a more centralized approach to governance is likely to be beneficial (Esty 1996). Thus, regional problems will likely benefit from some degree of global focus as well. And it is quite possible that an optimal policy response will demand implementation or some set of other activities (e.g., compliance monitoring) at a decentralized scale, so it would make sense to have national or even local authorities engaged in responding to the issue as well.

19. Likewise, even if the geographic scale of a problem is highly localized – such as responding to toxic waste – some elements of the policy process will likely benefit from more centralized analytic contributions. So while the “governance” of abandoned toxic waste dumps is best left to state or provincial (and maybe even local) authorities, it may well be that some of the underlying scientific analysis and policy option development should be undertaken at a national or even global scale.

20. It is important to note that at least one aspect of local and national issues benefits from global-scale consideration: information exchange. For even the most localized of issues such as the provision of drinking water or handling municipal-scale air pollution, there is great value in having a mechanism for international exchange of data, analysis of harms, cost-benefit assessments, the review of policy options, and comparisons of potential technologies to deploy. Indeed, one of the central virtues of the Organization for Economic Cooperation and Development (OECD) as an environmental governance body has been the organization’s role as a forum for information exchange. OECD data comparisons and country reports have allowed the member-states of the OECD to benchmark their environmental performance against a peer group of nations – providing substantive feedback on current programs and guidance as to “best practices.” With regard to certain issues, the OECD has been able to take a further step and to get countries to agree on common testing protocols, standards, or basic norms. Thus, the OECD chemicals program has advanced the regulatory capacity of all OECD members. And the commitment to the Polluter Pays Principle has provided a foundational principle for environmental policy across the world.

21. These same efforts could be, and should be, undertaken at the global scale. The value of having data collected and compared at a global scale has been demonstrated by the Environmental Sustainability Index (World Economic Forum 2002), which provides a ranking for 142 countries on 20 different dimensions of environmental performance. The analysis, undergirded by 68 data sets addressing various aspects of sustainability, provides a basis for benchmarking national environmental results, identifying leaders and laggards, and highlighting best practices. Many countries have begun to use the ESI as a policy guide for national and even state-scale decisionmaking.

22. Again, the conclusion must be that a multi-tier governance structure is to be preferred to any presumption in favor of sweeping decentralized or centralized governance. The “optimal environmental area” for any particular problem will be primarily determined by the physical “footprint” of the issue. From an economic perspective, allocative efficiency will only be achieved if the governing authority encompasses all of the costs and benefits – including most notably all unabated pollution harms as well as the costs and benefits of whatever control are undertaken. Given the range of geographic scales at which pollution problems and natural resource management challenges arise, some system of multi-tier environmental governance will almost certainly be required.

Further Challenges: Legitimacy, Efficiency and Equity

23. Whenever there is a governance structure that must work across multiple jurisdictions, questions of legitimacy related to decision processes will arise. Legitimacy fundamentally depends on the political accountability of the decision makers. If those who are setting the policy have been chosen through majority rule and fair elections, legitimacy will largely adhere to the decision they make. If, however, there is a great deal of distance between the decisionmakers and electoral legitimacy, it may be harder for the governance process to be accepted by the public as authoritative and appropriate. Thus, international environmental rules worked out by Foreign Ministry officials in a treaty negotiation or through officials meeting at UN Environment Program (UNEP) face special hurdles in developing legitimacy.

24. Governance processes are also judged by how efficient and fair they appear to be. Where there are questions about the cost involved in coming to a decision or carrying out an agreed-upon program, it may be hard to get the citizens and their leaders across the world to commit to the required collaboration. Similarly, to the extent that a program is not seen as fair either because the procedures involved have not given all of those who are affected by the outcome a “voice” in the process or because the costs of action are not fairly distributed legitimacy may be cast into doubt. In addition, the benefits of any such program will need to be seen as fairly distributed across those who are affected. Thus, the “burden sharing” of a collective environmental program is quite important.

25. Where there are multiple jurisdictions involved in a common effort to address an environmental issue, there may also be disagreements about how best to structure the initiative. Countries in different economic situations will often look at the same facts and come to divergent conclusions about how much effort or what sort of effort to put into a response. Optimal policies cannot be divorced from country-specific values and circumstances. Just this sort of divergent perspectives lie at the heart of the North-South tension that makes international environmental cooperation hard to achieve in many circumstances. For rich countries, it makes sense to address some harms that poor countries would not see as priorities given their limited public funds.

26. Environmental protection is understood by economists to be a luxury good. So, for example, wealthy countries will inevitably find that it makes sense to invest resources in programs aimed at protecting biodiversity where poor countries might not. The fact that the developing world has not taken on emissions control obligations in the climate change context is another example where divergent values are at play. But note that a good argument can be made that, in response to global scale problems, the policy should be set with regard to worldwide costs and benefits – centering on global marginal costs -- involving all countries in the response. But a separate conversation should be held with regard to who pays for the selected policy intervention (Esty and Mendelsohn 1997).

27. Where a successful international policy requires worldwide rules and regulations, particular tensions may well emerge along a North-South axis. Uniform standards and programs may seem “fair” to the extent that all countries, businesses, and individuals are treated equally. But a single standard might appear unfair to the extent that it imposes the same economic burden on countries without regard to their ability to pay. And a single standard imposed across all countries will be inefficient if circumstances differ across those jurisdictions (Mendelsohn 1986). But efforts to tailor standards and programs to the individual needs of each jurisdiction entail additional administrative costs as well as burden sharing questions (Esty and Geradin 2001).

28. More generally, developing countries have often opposed efforts to strengthen the international environmental regime. While most developing countries profess to support a model of “sustainable development,” many such nations object to any diversion of scarce resources into environmental protection if this would detract from economic growth. They also fear that any effort to invigorate global or regional environmental governance will come back to haunt them in the form of higher expectations for environmental results which they will not be able to meet. Such shortfalls are not, in and of themselves, a source of real concern. But developing countries worry that perceived sub-par performance might provide an excuse for some countries in the developed world to limit developing country imports into their markets. And they further argue that the North has failed to provide the resources necessary for the sort of capacity building and environmental investments needed to put the South on a sustainable growth trajectory.

29. Policymaking at an international level is, moreover, susceptible to regulatory failures as much as those that plague any other level of government – and maybe more so. Problems such as bureaucratic

inefficiency, technical incapacity, cognitive failures, and public choice distortions may become especially acute at the international scale. The vulnerability of the governance process to these failures is magnified by a lack of common perspectives across jurisdictions, the absence of any deep sense of shared destiny or community, and the fact that basic procedures and administrative law designed to structure and discipline the policy making process are underdeveloped in the international domain.

Regional Solutions to the Public Goods Problem

30. A vibrant and fully functioning United Nations – never mind a truly effective Kantian “Union of Nations” – does not appear to be on the horizon. This reality makes efforts at global governance, including international environmental governance, an ongoing challenge. But there is growing evidence of political identities – and some sense of community – emerging beyond the nation-state (Esty 1996). The European Union provides concrete evidence of this trend.

31. Collaboration among multiple jurisdictions generally seems easier to develop to the extent that there is some feeling of shared destiny or “community” across the jurisdictions. Such a sense of connectedness may be easier to establish on a regional scale. Neighboring countries often see themselves as sharing to some extent a common geography, traditions, history, or economic position.

32. It is this logic of connectedness that gives strength to the EU’s environmental efforts. And geographic proximity may justify UNEP’s regional seas initiative as well as other regional programs of international bodies. But regional environmental programs can only be as strong as the political identity of the group from which they derive. UNEP’s weakness thus limits the effectiveness of its regional seas program. While the programme covers 13 regions and has engaged 140 coastal states, it does not really provide governance in any deep sense. Indeed, the Regional Seas website declares that all actions under the programme are “primarily the task of [national] Governments, in close cooperation with all stakeholders including local communities, public organizations, and the private sector.” Similarly, the Commission for Environmental Cooperation under the NAFTA remains hamstrung by the unwillingness of the governments of Canada, Mexico, and the United States to delegate any real governance authority to it.

33. These regional efforts and virtually all others have also been held back by a lack of financial resources, limited political support, constrained capacity, and the absence of any ability to force countries to adhere to commitments made. However weak global environmental governance efforts appear to be, regional efforts emerge as even weaker.

34. Perhaps more broadly, most of the existing regional environmental governance initiatives lack the basic elements of legitimacy, equity, and efficiency needed to be taken seriously. In every case, the political authority for these programs is derivative from national officials. There are no regional decisionmaking bodies – with the partial exception of the European Parliament – where authority can be traced to direct electoral legitimacy. And most of these bodies – with the EU again standing out as a partial exception – fall short in terms of their perceived efficacy, efficiency, and equity.

35. Nor are the environmental programs these regional bodies carry out well integrated with global or national policy goals. For example, the NAFTA-connected Commission for Environmental Cooperation has been quite effective in highlighting issues of concern in the context of an emerging North American marketplace. But its broader legitimacy has been cast into doubt because the national governments to which it reports have undercut its authority on a number of occasions (Carlsen and Salazar 2002). Likewise, the environmental programs associated with other regional trade agreements – including programs connected to ASEAN, APEC, and Mercosur – have developed no firm base of legitimacy.

The Logic of Multi-Tier Governance

36. The core logic for multi-tier environmental governance derives from the theory of public goods and the matching principal which suggests that governance should arise at the scale of the harm in question. This economic logic runs parallel with the political principals of subsidiarity and federalism, which similarly suggests that multiple tiers of governance will best be able to handle problems that arise at a range of geographic scales.

37. But the fact that every problem has sub-elements that might be better handled at another geographic scale argues even more profoundly for a multi-tiered governance structure that provides an array of levels at which each problem can be worked out. The primary responsibility for a particular environmental problem should be lodged at the level of governance that corresponds to the physical scope of the harm in question.

38. But other elements of the governance structure should be brought into the decision-making process to the extent that they are optimal with regard to addressing a sub-element of the problem in question. Thus, for example, in addressing the problem of climate change, it would be necessary to have a number of decisions taken at the global scale. But implementation of these policy choices may best be undertaken at a national level. Indeed, to the extent that enforcement and implementation are better undertaken nationally, a substantial part of the climate change "action" will have to occur at the national or even local scales.

39. There is also a logic to having a degree of policy competition among horizontally-arrayed jurisdictions such as: (a) states competing to design superior environmental strategies within federal systems such as those that exist in Australia, Brazil, Canada, Germany, Mexico, and the United States and (b) countries competing to show better environmental results at the international level. Such "regulatory competition" can enhance welfare if it provides a basis for experimentation and a competitive pressure on governments to act efficiently (Tiebout, 1954; Revesz, 1992). As Esty and Geradin (1997) highlight, such competition can also emerge on a vertical plane with authorities at various levels competing to produce more innovative and effective environmental programs.

40. A further logic to having multiple scales of governance derives from the political theory of countervailing power or what is more commonly known as "checks and balances." In this regard, having governance responsibilities spread across multiple levels of authorities provides a basis for "co-opetition" between governments. To some extent, different levels of government will cooperate in sharing the responsibility for sorting out environmental problems. State governments may gather data that national governments use for deciding on policy options – and international authorities will tabulate data gathered at the national scale. But each level will also compete with the others to provide superior outcomes. This competition is especially helpful where one level of government falls down on its decisionmaking responsibilities. Such failures might occur due to poor political leadership, special interest domination, or corruption.

41. The benefits of competitive decision-making across levels of government can be seen in the climate change context in the United States. While the federal government (under President George W. Bush) has declined to take part in international climate change program laid out in the Kyoto Protocol, many U.S. states have stepped up their regulatory efforts. California, for instance, has now adopted greenhouse gas emissions controls. In this circumstance, the state-level activities can be seen as a backstop for the under-performance of the national authorities.

Rethinking the International Environmental Regime

42. The existing international environmental governance regime has proven to be quite weak.

43. UNEP, in particular, has often seemed inadequate to the task of global-scale environmental protection. Many international-scale problems remain unaddressed or under-addressed (Speth 2004; Rischard 2003). While UNEP was able to rally the nations of the world in response to the problem of ozone layer depletion (Benedick 1991), the existing international regime has done much less well in response to fisheries depletion, climate change, the loss of biodiversity, and control of genetically modified organisms. The existing regime's weakness has been amply documented elsewhere (Esty 1994; Young 1999; Runge 2001).

44. It is perhaps worth looking carefully at the one issue where the UNEP has achieved success: the international effort to phase out CFCs and other ozone-depleting-chemicals through the Vienna Convention, the Montreal Protocol, and several subsequent amendments. In this case, the environmental problem was incontrovertibly global in scope. The core set of countries which entered into the original treaty negotiations understood their interdependence. Moreover, the thinning of the ozone layer had a very distinct cause, and the underlying scientific analysis pinning the blame on CFCs and related

chemicals was broadly accepted. In addition, substitute products were developed that could be acquired at a reasonable cost.

45. Even with this relatively solid analytic foundation, the international effort had to be carefully aligned with the national programs of key countries. The United States, in particular, saw advantages to having worldwide standards insofar as it had unilaterally banned some uses of CFCs a decade earlier. But the first Bush Administration refused to agree to a full phase-out of CFCs until the major U.S. producer, Dupont, signaled that it was ready to proceed. Similar efforts at national-international policy integration occurred within the European context.

46. Finally, while countries had different views about how pressing the problem was, there was no unbridgeable "values" gap. More importantly, a commitment was made at the time of the Montreal Protocol to set up a fund to subsidize the purchase of CFC substitutes by developing countries and to assure these countries that their development aspirations would not be compromised by their commitment to the global-scale environmental protection effort. A carefully balanced governance structure was established to supervise this fund, ensuring that all projects would have the approval of both developed and developing countries. As a result, the environmental action plan set in motion was perceived to be both efficient and fair – adding to the legitimacy of the CFC phaseout.

47. In thinking about how to strengthen the international environmental governance structure, several core principles emerge:

- 1. Sound environmental policymaking requires “governance” at the geographic scope of the harms in question. Given the multiple scales at which pollution control problems and natural resource management challenges arise, a multi-tier governance structure should be adopted.
- 2. As a theoretical matter, the “matching principle” should guide decisions about which level of authorities should be given primary responsibility for any particular problem of environmental governance. Global scale action should be centered on global scale problems. A regional focus should be adopted for transboundary pollution control or natural resource management issues that are not worldwide in scale.
- 3. While some problems will require local attention, some state or provincial focus, some national leadership, and others international intervention, every problem will have some sub-elements which are better addressed at other levels. This reality further reinforces the need for a multi-tier governance structure.
- 4. International governance – whether global or regional – entails problems of legitimacy that must be addressed. Special care should be given to trying to make international decision processes transparent and participatory. Connecting international officials to those with political authority established by electoral mandates at the national scale – and integrating international outcomes with national agendas is thus very important. Likewise, ensuring that international decision processes take on board the views of all those who might be affected by the choices made – including NGOs and the private sector – will add to the legitimacy of outcomes. This participatory emphasis requires focused efforts to provide access to those from developing countries and to support capacity building in these countries to ensure that the developing country “voice” is clearly heard.
- 5. Additional attention must be given to making the international governance process both efficient and fair. Whether decisions are made at the global scale or the regional level, it is important that these core principles, underlying legitimacy, be given careful attention.
- 6. Given the historic underdevelopment of international scale environmental governance systems, careful consideration should be given to creating a vibrant global environmental organization and appropriate regional environmental institutions. The international environmental regime needs the capacity to convene negotiations, tap a worldwide network of experts and expertise, set rules, monitor compliance with international agreements, gather and analyze data, provide a basis for benchmarking national environmental performance and identifying best practices, facilitate policy evaluation and information exchange, support capacity building in the developing world, enable technology exchanges, and promote adequate funding of global public goods.

Bibliography

- Barrett, Scott. 2003. *Environmental Statecraft: The Strategy of Environmental Treaty-making*. New York: Oxford University Press.
- Baumol, William J. and Wallace E. Oates. 1988. *The Theory of Environmental Policy*. Cambridge: Cambridge University Press.
- Benedick, Richard. 1991. *Ozone Diplomacy: New Directions in Safeguarding the Planet*. Cambridge: Harvard University Press.
- Biermann, Frank and Steffen Bauer. 2004. "Assessing the effectiveness of intergovernmental organisations in international environmental politics." 14 *Global Environmental Change: Human and Policy Dimensions* 189.
- Buchanan, James, and Gordon Tullock. 1971. *The Calculus of Consent*. Ann Arbor: University of Michigan Press.
- Butler, Henry, and Jonathan Macey. 1996. "Externalities and the Matching Principle: The Case for Reallocating Environmental Regulatory Authority." 25 *Yale Law and Policy Review*.
- Carlsen, Laura, and Hilda Salazar. 2002. "Limits to Cooperation: A Mexican Perspective on the NAFTA's Environmental Side Agreement and Institutions" in Deere and Esty (eds.), *Greening the Americas: NAFTA's Lessons for Hemispheric Trade*. Cambridge: MIT Press.
- Cooper, Richard N. 1994. *Environment and Resource Policies for the World Economy*. Washington: Brookings Institution.
- Dua, Andre and Daniel Esty. 1997. *Sustaining the Asia Pacific Miracle*. Washington: Institute for International Economics
- Elliott, E. Donald, Bruce A. Ackerman, and John C. Millian. 1985. "Toward a Theory of Statutory Evolution: The Federalization of Environmental Law". 1 *Journal of Law, Economics and Organization* 313.
- Esty, Daniel. 1994. "The Case for a Global Environmental Organization" in Kenen (ed.), *Managing the World Economy: Fifty Years After Bretton Woods*. Washington: Institute for International Economics.
- Esty, Daniel. 1996. "Revitalizing Environmental Federalism." 95 *Michigan Law Review* 570.
- Esty, Daniel. 1999. "Toward Optimal Environmental Governance." 74 *NYU Law Review* 1495.
- Esty, Daniel and Damien Geradin. 2001. "Regulatory Co-opetition " in Esty and Geradin (eds.), *Regulatory Competition and Economic Integration*. Oxford: Oxford University Press.

- Esty, Daniel and Maria Ivanova. 2002. *Global Environmental Governance: Options and Opportunities*. New Haven: Yale School of Forestry and Environmental Studies.
- Esty, Daniel and Robert Mendelsohn. 1998. "Moving from National to International Environmental Policy." 31 *Policy Sciences* 225.
- Haas, Peter M., Robert O. Keohane, and Marc A. Levy. 1993. *Institutions for the Earth: Sources of Effective International Environmental Protection*. Cambridge: MIT Press.
- Hardin, Garrett. 1968. "The Tragedy of the Commons." *Science* 162.
- Kaul, Inge, et al.(eds.). 1999. *Providing Global Public Goods: Managing Globalization*. New York: Oxford University Press.
- Mendelsohn, Robert. 1986 "Regulatory Heterogeneous Emission." 13 *Journal of Environmental Economics and Management*.
- Olson, Mancur. 1965. *The Logic of Collective Action: Public Goods and the Theory of Groups*. Cambridge, MA: Harvard University Press.
- Ostrom, Elinor. 1990. *Governing the Commons: The Evolution of Institutions for Collective Action*. New York: Cambridge University Press, 1990
- Revesz Richard. 1992. Rehabilitating Interstate Competition: Rethinking the "Race-to-the-Bottom" Rationale for Federal Environmental Regulation. 67 *New York University Law Review* .
- Rischar, Jean-Francois. 2003. *High Noon: 20 Global Problems, 20 Years to Solve Them*.
- Runge, C. Ford. 2001. "A Global Environmental Organization (GEO) and the World Trading System." 35 *Journal of World Trade* 399.
- Speth, J. Gustave. 2004. *Red Sky at Morning: America and the Crisis of the Global Environment*. New Haven: Yale University Press.
- Tiebout, Charles. 1956. A Pure Theory of Local Expenditures. 64 *Journal of Political Economy*.
- Tullock, Jordan. 1969. "Federalism: Problems of Scale." 6 *Public Choice*. 19.
- Vogler, John. 1995. *The Global Commons: A Regime Analysis*.
- World Economic Forum (with the Yale Center for Environmental Law and Policy and Columbia University's Center for International Earth Science Information Network). 2002. Environmental Sustainability Index (available at: www.yale.edu/envirocenter).
- Young, Oran R. 1999. *The Effectiveness of International Environmental Regimes: Causal Connections and Behavioral Mechanisms*. Cambridge: MIT Press.