

BREAKING THE ENVIRONMENTAL LAW LOGJAM: THE INTERNATIONAL DIMENSION

DANIEL C. ESTY*

Breaking the Logjam in environmental policymaking will not be easy. The forces arrayed against action are significant. But the need to reframe environmental law is great, not only domestically but internationally, where an effective worldwide response to issues that transcend national borders is urgently required. In this regard, the core principles of the Breaking the Logjam Project—especially Principle 3 regarding the scale of regulatory authority—must be extended to the international domain in support of a revitalized global environmental governance system.¹

My central argument extends the logic of having regulatory authority match the scope of the environmental problem at hand to the global realm, with some refinements to reflect the differences between the international and national settings. This theoretical claim builds on public goods economics as well as broad-based scholarship on the collective action problem.² Often the “matching principle” implies a need for greater regulatory decentralization.³

* Daniel Esty is Hillhouse Professor of Environmental Law and Policy at Yale University with appointments in both Yale's Environment and Law Schools. Thanks to Christine Kim, Jessica Jiang, Lucy Sorensen, and Sam Pool for research assistance—and to Marge Camera for administrative support.

¹ See BREAKING THE LOGJAM: AN ENVIRONMENTAL LAW FOR THE 21ST CENTURY, BACKGROUND OF THE BREAKING THE LOGJAM PROJECT (2008), <http://www1.law.nyu.edu/conferences/btl/documents/LongversionofBACKGROUND2-11-08.pdf> (last visited Sept. 12, 2008).

² WILLIAM J. BAUMOL ET AL., THE THEORY OF ENVIRONMENTAL POLICY 10–11 (Cambridge Univ. Press 1998) (1975); RUSSELL HARDIN, COLLECTIVE ACTION (Johns Hopkins Univ. Press 1982); MANCUR OLSON, THE LOGIC OF COLLECTIVE ACTION: PUBLIC GOODS AND THE THEORY OF GROUPS (2d ed., Harvard Univ. Press 1971); ELINOR OSTROM, GOVERNING THE COMMONS: THE EVOLUTION OF INSTITUTIONS FOR COLLECTIVE ACTION (Cambridge Univ. Press 1990); Maureen L. Cropper & Wallace E. Oates, *Environmental Economics: A Survey*, 30 J. OF ECON. LIT. 675 (1992).

³ The matching principle argues that the institutional response should match in scope with each individual problem while also recognizing that too many tiers of governance can be administratively burdensome. See OLSON, *supra* note 2, at

In a few cases, however, issues spill across country borders and sometimes even reach worldwide scope. Problems at this scale require a degree of transboundary regulatory activity to protect human health and ecosystem vitality.⁴ While allocating any measure of governmental authority to international bodies presents special challenges that must be addressed, a successful response to threats such as climate change, depleted ocean fisheries, lost biodiversity, and long-range transport of heavy metals and persistent organic pollutants (POPs) depends on having functioning institutional mechanisms that deliver global-scale environmental protection.

More broadly, managing international interdependence represents one of the great challenges of our era. The need for policy collaboration at a supranational scale goes beyond the environment to other issues such as security, trade liberalization, and public health. For each issue, a measure of global governance is required.⁵ As with other such challenges (i.e., combating terrorism, creating a trading system that promotes shared prosperity, and containing the spread of diseases such as SARS), some aspects of environmental protection simply cannot be addressed adequately by national governments acting on their own.

In this article, I make the case for a strengthened global environmental regime as part of a multi-tiered structure of governance positioned to respond to pollution control and natural resource management problems of varying geographic extents. I recognize that the logic of collective action at the supranational scale is pitted against a heightened risk of public choice failure due to a lack of electoral discipline on those wielding power beyond national borders. So I do not suggest that transboundary environmental problems should simply be turned over to international authorities. My claim is more nuanced—calling for better global governance based on a commitment to enhanced supranational regulatory capacity.

46–48; Henry N. Butler & Jonathan R. Macey, *Externalities and the Matching Principle: The Case for Reallocating Environmental Regulatory Authority*, 14 *YALE L. & POL'Y REV.* 23 (1996); *BREAKING THE LOGJAM*, *supra* note 1.

⁴ Daniel C. Esty, *Revitalizing Environmental Federalism*, 95 *MICH. L. REV.* 570, 626–27 (1996).

⁵ See generally Daniel C. Esty, *Good Governance at the Supranational Scale: Globalizing Administrative Law*, 115 *YALE L.J.* 1490 (2006).

In turning from the theory to the practice of international environmental policymaking today, I review the performance of the United Nations Environment Programme (UNEP) and other international bodies—and find them lacking. Our present dysfunctional regime is especially worrisome as the world community moves toward a serious planet-wide effort to halt the build-up of greenhouse gases in the atmosphere. To be effective, efficient, and equitable, the response to climate change must be founded on a global environmental governance structure with carefully designed rules and procedures.

In arguing that any attempt to reconstruct environmental law must include an international dimension, I do not simply argue for more resources and a bigger commitment to UNEP. To the contrary, I suggest that the need for a revitalized environmental regime offers an opportunity to rethink our model of international institutions altogether. I urge consideration of a new, streamlined international body: a Global Environment Organization that is more focused, network-based, and largely “virtual.”

I close with a plea for a fifth core “Logjam” principle: a commitment to innovation as the centerpiece of our environmental policy structure. In brief, evidence is now overwhelming that societal progress on pollution control and natural resource management depends fundamentally on creative thinking and technology development. It is also clear that as an engine of innovation, the private sector outperforms the government. Thus, our policy goal must be to induce the largest number and most wide-ranging set of companies into the business of imagining, inventing, funding, testing, refining, and commercializing new technologies in response to climate change, air and water pollution, and other environmental challenges. A global “clean tech” marketplace, framed by regulations and incentives with worldwide reach, would contribute to both the scale and diversity of environmental innovation, thus maximizing the odds of breakthroughs in energy efficiency, emissions control, alternative sources of energy, and/or carbon sequestration.

I. THEORETICAL UNDERPINNINGS

The idea that regulatory authority should track the scope of

the problem at hand is not controversial.⁶ The logic of collective action argues for providing public goods at a scale that encompasses all of the cost bearers and the beneficiaries of any government effort so that cost-benefit calculations will be done correctly and externalities will not be ignored.⁷ Well-established theory suggests that costs (and benefits) that fall beyond a government official's scope of responsibility tend to be given little weight in the policy calculus. Simply put, if the regulatory authority's jurisdiction is too narrow, public goods, including environmental protection, tend to be under-produced.

The implications of this theory in the context of a set of environmental problems, some of which transcend national borders, suggest the need for a more robust global environment governance system. Numerous academics⁸ and policymakers⁹ have

⁶ See, e.g., Butler & Macey, *supra* note 3.

⁷ See OLSON, *supra* note 2, at 20–21; E. Donald Elliott et al., *Toward a Theory of Statutory Evolution: The Federalization of Environmental Law*, 1 J.L. ECON. & ORG. 321–23 (1985) (arguing that economic externalities arise if the scope of the cost-bearers and beneficiaries of regulation are not coterminous).

⁸ See generally MICHAEL BARNETT & MARTHA FINNEMORE, *RULES FOR THE WORLD: INTERNATIONAL ORGANIZATIONS IN GLOBAL POLITICS* (Cornell Univ. Press 2004); A WORLD ENVIRONMENT ORGANIZATION: SOLUTION OR THREAT FOR EFFECTIVE INTERNATIONAL ENVIRONMENTAL GOVERNANCE? (Frank Bierman & Steffen Bauer eds., Ashgate 2005); BHARAT DESAI, *INSTITUTIONALIZING INTERNATIONAL ENVIRONMENTAL LAW* (Transnational Publishers, Inc. 2004); INSTITUTIONS FOR THE EARTH: SOURCES OF EFFECTIVE INTERNATIONAL ENVIRONMENTAL PROTECTION (Peter M. Hass et al. eds., M.I.T. Press 1993); LAMONT C. HEMPEL, *ENVIRONMENTAL GOVERNANCE: THE GLOBAL CHALLENGE* (Island Press 1996); RONNIE D. LIPSCHUTZ WITH JUDITH MAYER, *GLOBAL CIVIL SOCIETY AND GLOBAL ENVIRONMENTAL GOVERNANCE: THE POLITICS OF NATURE FROM PLACE TO PLANET* (SUNY Press 1996); UNEO – TOWARDS AN INTERNATIONAL ENVIRONMENT ORGANIZATION (Andreas Rechkemmer ed. Nomos 2005); PETER H. SAND, *LESSONS LEARNED IN GLOBAL ENVIRONMENTAL GOVERNANCE*, (World Resources Institute 1990); JAMES GUSTAVE SPETH, *RED SKY AT MORNING: AMERICA AND THE CRISIS OF THE GLOBAL ENVIRONMENT 177–79* (Yale Univ. Press 2004); GLOBAL ENVIRONMENTAL CHANGE PROGRAMME, *THE ENVIRONMENT AND INTERNATIONAL RELATIONS* (John Vogler & Mark F. Imber, eds., Routledge 1996); ORAN R. YOUNG, *INTERNATIONAL GOVERNANCE: PROTECTING THE ENVIRONMENT IN A STATELESS SOCIETY* (Cornell Univ. Press 1994); Steve Charnovitz, *A World Environment Organization*, 27 COLUM. J. ENVTL. L. 323 (2002); Daniel C. Esty & Maria H. Ivanova, *Revitalizing Global Environmental Governance: A Function-Driven Approach*, in GLOBAL ENVIRONMENTAL GOVERNANCE: OPTIONS & OPPORTUNITIES (Daniel C. Esty & Maria H. Ivanova eds., Yale School of Forestry & Env'tl. Studies 2002); Daniel C. Esty, *The Case for a Global Environmental Organization*, in MANAGING THE WORLD ECONOMY

made this point. More generally, the matching principle implies that regulatory authority must track a range of “optimal environmental areas,”¹⁰ reinforcing the case for governance at various scales, including the international level. The focus on scope suggests that local issues (such as land-use decisions) are best addressed at a municipal level. Broader-scale issues (such as river pollution) require a provincial, state, or regional response. Issues that span many states or provinces are best dealt with nationally (such as automobile tailpipe standards). By the same logic, global-scale harms, such as climate change, need to be addressed on a worldwide basis. The bottom-line is straightforward: if we take seriously the idea that smaller scale problems argue for decentralized regulatory authority, the parallel logic says that when the scope of a harm extends beyond national borders, policy activity needs to be undertaken at a supranational level.

Taken literally, the matching principle would suggest that nearly every environmental problem has a distinct optimal regulatory scale. The resulting multiplicity of jurisdictions would, of course, be administratively impractical. So just as we have settled on generally three levels of governance within our country—national, state, local—two or three levels of international policymaking would seem appropriate. The idea that, on occasion, the optimal environmental area for regulation might be

287 (P. B. Kenen ed., *Inst. for Int'l Econ.* 1994); Peter M. Haas, *Addressing the Global Governance Deficit*, *GLOBAL ENVTL. POL.*, Nov. 2004, at 1; C. Ford Runge, *A Global Environmental Organization (GEO) and the World Trading System*, 35 *J. WORLD TRADE* 399 (2001); Jonathan R. Strand, *The Case for Regional Environmental Organizations*, in *EMERGING FORCES IN ENVIRONMENTAL GOVERNANCE* 71 (Norichika Kanie & Peter M. Haas eds., United Nations Univ. Press 2004).

⁹ Renato Ruggiero, Dir.-Gen., World Trade Org., Opening Remarks to the High Level Symposium on Trade and the Environment (Mar. 17, 1999); Prime Minister Lionel Jospin, Keynote Address at the Annual World Bank Conference on Development Economics (June 21, 1999); President Jacques Chirac, Address at the Conference for Global Ecological Governance (Feb. 2, 2007) (transcript available at <http://www.ambafrance-us.org/IMG/html/standpoint/archives-standpoint/stand193.html>).

¹⁰ ANDRÉ DUA & DANIEL C. ESTY, *SUSTAINING THE ASIA PACIFIC MIRACLE: ENVIRONMENTAL PROTECTION AND ECONOMIC INTEGRATION* 123–25 (Peterson Inst. for Int'l Econ. 1997) (introducing the “optimal environmental area” concept, which builds on Economics Nobel Prize winner Robert Mundell’s work on “optimal currency areas”).

international is, nevertheless, controversial.¹¹ The prospect of a “global EPA” raises questions of national sovereignty, lost regulatory control, unconstrained decisionmakers, and public choice failure.¹² These concerns require careful consideration and will be addressed below.

Economies of scale in regulatory activities offer another reason for a multi-tiered environmental policy structure, including a degree of international institutional capacity. Environmental policymaking—issue spotting, problem specification, harm evaluation, policy option assessment, cost-benefit analysis, rulemaking, program implementation, enforcement, evaluation, and program refinement—involves a range of activities some of which are done better on a centralized basis.¹³ For example, collecting and analyzing data on a broad scale often allows trends to be spotted faster. In this regard, comparative national performance evaluation and benchmarking requires consistent data and thus a degree of international coordination.¹⁴

More generally, analytic work often benefits from scale economies. For instance, every state in the country does not have to do its own cancer studies. Nationwide Environmental Protection Agency (EPA) research can be used to draw general conclusions that apply universally, even while we look for geographic “hotspots” where local circumstances raise special concern. Similarly, pesticide exposure analyses could be done at a global scale with countries sharing the costs and results. But even where an element of policymaking can be done globally, other elements will still need national (or even local) follow-through. Actual pesticide tolerances, for example, must be determined nationally to reflect divergent patterns of food consumption and risk

¹¹ Robert A. Dahl, *Can International Organizations Be Democratic? A Skeptic's View*, in *DEMOCRACY'S EDGES* 19 (Ian Shapiro & Casiano Hacker-Cordón eds., Cambridge Univ. Press 1999); DUA & ESTY, *supra* note 10, at 97 (discussing “super-externalities”).

¹² Esty, *supra* note 5, at 1502–08. *See generally* Richard B. Stewart, *The Reformation of American Administrative Law*, 88 HARV. L. REV. 1667 (1975).

¹³ Daniel C. Esty, *Toward Optimal Environmental Governance*, 74 N.Y.U. L. REV. 1495, 1554–56 (1999).

¹⁴ *E.g.*, DANIEL C. ESTY ET AL., YALE CTR. FOR ENVTL. L. & POL'Y, 2008 ENVIRONMENTAL PERFORMANCE INDEX 12–13 (New Haven: Yale Ctr. for Env'tl. L. & Pol'y, 2008), available at http://www.yale.edu/epi/files/2008EPI_Text.pdf.

preferences.

It should be noted that strengthened global governance does not translate into exclusive international policymaking on any issue. The aspects of environmental protection that benefit from geography-specific input—particularly where variations in land types and uses, population density, or climate are salient—would require national execution. Likewise, where levels of development, values, or budget priorities diverge, environmental policies will have to be advanced in a way that is consistent with national capacities and traditions. A critical corollary to the matching principle is therefore *subsidiarity*—a commitment to undertaking environmental decisionmaking at the most decentralized level possible, but not past the point where externalities are fully internalized; and not so rigidly that the benefits of more centralized (even global) regulatory capacity are lost.

Another traditional argument for decentralized governance centers on potential efficiency gains from Tieboutian “regulatory competition.”¹⁵ But a more nuanced view of the regulatory competition dynamic recognizes the value of *vertical* as well as *horizontal* competition—and the importance of cooperation rather than competition in some circumstances.¹⁶ Having global-scale officials who “compete” with and simultaneously “cooperate” with national authorities promises better governance at both levels.

The recent response to climate change has benefited from the presence of global-scale policy efforts in addition to the national (and state or local) programs. While sometimes halting, the international negotiations have provided critical data and analyses, fostered needed dialogue on methodologies for measuring emissions, and offered a mechanism for comparing and contrasting national climate change policies and performance. Where national governments fail to address a problem, a robust global environmental governance system can highlight lagging performance, force national officials to justify their policy choices (or inaction), and enrich the national policy dialogue. For example,

¹⁵ See Charles M. Tiebout, *A Pure Theory of Local Expenditures*, 64 J. POL. ECON. 416 (1956).

¹⁶ Daniel C. Esty & Damien Geradin, *Regulatory Co-Opetition*, in REGULATORY COMPETITION AND ECONOMIC INTEGRATION: COMPARATIVE PERSPECTIVES 30 (Daniel C. Esty & Damien Geradin eds., Oxford Univ. Press 2001) (introducing the concept of regulatory “co-opetition”).

in the United States, where federal climate change policy has not advanced very much since the early 1990s, the nation has benefited from ongoing global as well as state and local policy processes, which offer a “check” on Washington. While this overlap in authority creates some tension and redundancy in the system, it also provides a “safety net” against policy failure at the level of the nation-state.

The value of having an international vector of environmental policymaking has been repeatedly demonstrated by the work of the Organization for Economic Cooperation and Development (OECD) in Paris. OECD analyses, data, and guidelines help officials at the national level to benchmark their own environmental performance.¹⁷ Similarly, OECD “country reports” provide, in effect, a mechanism for benchmarking pollution control efforts. To the extent that the OECD analyses provide a methodologically-consistent baseline for comparisons across countries, the organization facilitates *horizontal* as well as *vertical* competition.

II. LIMITS TO SUPRANATIONAL GOVERNANCE

Supranational policymaking generates special challenges arising from the democratic deficit that plagues global governance.¹⁸ While the argument for internalizing externalities remains vital at the global scale, the impediments to effective collective action are real. There is no overarching sovereign to set standards, limit spillovers of harm, or impose penalties on “free riding.” This makes a “tragedy of the commons” much more likely and creates a magnified risk of overexploitation of shared resources including the atmosphere and the oceans. Elections are not available to discipline decisionmakers. The lack of a political community means key public officials end up being appointed rather than elected, and the mechanisms for holding policymakers

¹⁷ Esty, *supra* note 5, at 1547; Organisation for Economic Co-operation and Development, *Environmental Indicators and Outlooks*, http://www.oecd.org/topic/0,3373,en_2649_34283_1_1_1_1_37465,00.html (last visited Sept. 25, 2008).

¹⁸ Allen Buchanan & Robert O. Keohane, *The Legitimacy of Global Governance Institutions*, 20 ETHICS & INT’L AFF. 405, 416–17 (2006); Esty, *supra* note 5, at 1515–16; Benedict Kingsbury et al., *The Emergence of Global Administrative Law*, 68 LAW & CONTEMP. PROBS. 15, 48–51 (2005).

accountable are attenuated. Designing alternative institutional mechanisms to overcome this democratic weakness becomes essential.

A number of scholars have spelled out ways to limit public choice failures in international policymaking.¹⁹ Procedural rigor and a commitment to administrative law can control lobbying, limit corruption and self-dealing, constrain special interests, encourage careful rulemaking, ensure mechanisms for public participation and transparency, guarantee access to information,²⁰ provide a review process, and institutionalize processes to “cross-check” decisions.²¹

There is a further degree of complexity to governance at the global scale stemming from the divergence of values. While domestic politics can be highly contentious, and people as well as their representatives may hold deeply different views about what the ends and means of environmental protection should be, conflicts multiply at the global scale. Across countries, people have differing perspectives and priorities based on level of development, cultural traditions, risk preferences, and other values. Domestically, there are many structures and settings within which to work out compromises and find common ground. Internationally, the lack of any such complex density of institutions means there are fewer mechanisms to promote dialogue and compromise—making the reconciliation of opposing views harder to achieve. Likewise, the “thinness” of global politics, the limited sense of community and shared identity, and the lack of deep trust relationships across groups and individuals make policy convergence difficult.

¹⁹ See JERRY L. MASHAW, *GREED, CHAOS, AND GOVERNANCE: USING PUBLIC CHOICE TO IMPROVE PUBLIC LAW* 130 (Yale Univ. Press 1997); SUSAN ROSE-ACKERMAN, *CONTROLLING ENVIRONMENTAL POLICY: THE LIMITS OF PUBLIC LAW IN GERMANY AND THE UNITED STATES* 54 (Yale Univ. Press 1995); Robert O. Keohane, *International Organization and the Crisis of Interdependence* 29 *INT’L ORG.* 357 (1975) (discussing the rise of interdependence and the necessity for “normatively infused organizational strategies”).

²⁰ Convention on Access to Information, Public Participation in Decisionmaking and Access to Justice in Environmental Matters, June 25, 1998, 38 *I.L.M.* 517.

²¹ Esty, *supra* note 5, at 1533–36; Buchanan & Keohane, *supra* note 18, at 417 (discussing the fact that good governance requires a “complex web of institutions”); Kingsbury et al., *supra* note 18, at 17.

While the challenges of making global-scale governance work should not be gainsaid, the need for functioning international policymaking must also not be underestimated. Global-scale market failure translates into allocative inefficiency, lower social welfare, and reduced gains from trade, not to mention environmental degradation. A vigorous commitment to good governance in international organizations can help to blunt the perceived democratic deficit in global scale policymaking.²²

III. FROM THEORY TO PRACTICE

In turning from theory to practice, the current system of global environmental governance can only be described as seriously under-performing. The international response to a small set of problems, such as protection of the ozone layer from chlorofluorocarbons (CFCs) and other related chemicals, has been relatively successful. In general, however, recent results confirm the theoretical arguments suggesting the need for better environmental law and international policy structures.²³ A serious effort to combat climate change has proven difficult to construct.²⁴ Fisheries in the world's oceans are being depleted with current

²² Peter L. Lindseth, *The Contradictions of Supranationalism: Administrative Governance and Constitutionalization in European Integration Since the 1950s*, 37 *LOY. L.A. L. REV.* 363–69 (2003) (arguing that the EU emerged as a successful administrative entity despite questions about its constitutional legitimacy and polity); Peter L. Lindseth, *Democratic Legitimacy and the Administrative Character of Supranationalism: The Example of the European Community*, 99 *COLUM. L. REV.* 628, 721–22 (1999) (arguing that the nondelegation principle retains member-states' decisionmaking power, which renders decisions more responsive to political will); see Francesca Bignami, *The Challenge of Cooperative Regulatory Relations After Enlargement*, in *LAW AND GOVERNANCE IN AN ENLARGED EUROPEAN UNION* 97, 98 (George Bermann and Katharina Pistor eds., 2004).

²³ JAMES GUSTAVE SPETH & PETER M. HAAS, *GLOBAL ENVIRONMENTAL GOVERNANCE* 74–81 (Island Press 2006); SCOTT BARRETT, *ENVIRONMENT AND STATECRAFT: THE STRATEGY OF ENVIRONMENTAL TREATY-MAKING 2* (Oxford Univ. Press 2003).

²⁴ DAVID G. VICTOR, *THE COLLAPSE OF THE KYOTO PROTOCOL AND THE STRUGGLE TO SLOW GLOBAL WARMING* 17 (Princeton Univ. Press 2001); Scott Barrett & Robert Stavins, *Increasing Participation and Compliance in International Climate Change Agreements* 3 *INT'L ENV. AGREEMENTS: POL., L. AND ECON.* 349 (2003); Sheila M. Olmstead & Robert N. Stavins, *An International Policy Architecture for the Post-Kyoto Era*, 96 *AM. ECON. REV.* 35 (2006).

levels of catch exceeding sustainable yields.²⁵ Biodiversity is being lost on every continent.²⁶ Efforts to reconcile trade liberalization and globalization with environmental protection have been halting.²⁷

At the heart of the matter lies the weakness of the United Nations Environment Programme (UNEP). UNEP plays almost no role in addressing the central issue of our time—climate change. Its analytic work carries little clout.²⁸ UNEP does some data collection,²⁹ but has failed to generate a core set of environmental performance indicators to shape the policy debate.³⁰

There are many reasons for UNEP's underwhelming performance: the organization's mandate is vague; its leadership has been weak; national political support is often absent; and UNEP's budget is miniscule. For purposes of comparison, the US spends about \$47 billion in response to national environmental concerns, another \$13 billion on state-level issues, and many billions on local problems.³¹ In contrast, the operating budget of

²⁵ FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS, THE STATE OF WORLD FISHERIES AND AQUACULTURE 7 (2006); Boris Worm et al., *Impacts of Biodiversity Loss on Ocean Ecosystem Services* 314 SCIENCE 787 (2006).

²⁶ SECRETARIAT OF THE CONVENTION ON BIOLOGICAL DIVERSITY, GLOBAL BIODIVERSITY OUTLOOK 2, 2–5 (2006).

²⁷ See GARY P. SAMPSON, THE WTO AND SUSTAINABLE DEVELOPMENT 55–56 (United Nations Univ. Press 2005); Speech, Pascal Lamy, EU Trade Commissioner, The Future of WTO to European Parliament Kangaroo Group (Brussels) (Jan. 27, 2004) (transcript available at http://www.europa-eu-un.org/articles/en/article_3175_en.htm); Steve Charnovitz, *The WTO's Environmental Progress*, 10 J. INT'L ECON. LAW 685 (2007); Daniel C. Esty, *Governing at the Trade-Environment Interface*, in GLOBAL GOVERNANCE AND THE WTO 113–114 (Gary Sampson ed., 2008).

²⁸ Jodie Hierlmeier, *UNEP: Retrospect and Prospect – Options for Reforming the Global Environmental Governance Regime*, 14 GEO. INT'L ENVTL. L. REV. 767 (2001).

²⁹ Maria Ivanova, *Assessing the United Nations Environment Programme*, in 2 MEETING GLOBAL CHALLENGES: INTERNATIONAL COOPERATION IN THE NATIONAL INTEREST 122 (2006).

³⁰ So serious is this deficiency that others have now stepped in to fill the metrics gap. Esty et al., *supra* note 14.

³¹ U.S. CENSUS BUREAU, FEDERAL STATE AND LOCAL FINANCES: 2004–05 (2006), http://www.census.gov/govs/estimate/0500ussl_1.html (last visited Sept. 14, 2008); U.S. DEPARTMENT OF STATE, BUSH ENVIRONMENTAL SPENDING PROPOSALS IN 2005 BUDGET, INFOUSA (2005), <http://usinfo.state.gov/infousa/life/science/spendproposal.html> (last visited Sept. 14, 2008); ENVIRONMENTAL COUNCIL OF THE STATES, STATE ENVIRONMENTAL SPENDING 2005–2008 (2008),

UNEP is about \$200 million a year.³² UNEP's lack of even basic financial capacity means that the organization is often driven by donor desires. If a country gives money, an initiative gets launched. But such a "project" focus represents a big distraction from the core work of global-scale governance.

UNEP has been handicapped, moreover, by its location in Nairobi.³³ It is extremely hard to attract top-tier people to a career in Kenya as the quality of life is low and the level of violence is high. In fact, over the past 20 years, more than a dozen UNEP officials or their family members have been killed. In contrast, star-quality global bureaucrats in the international economic domain have no qualms about making a career in Washington at the World Bank or in Geneva at the World Trade Organization.

Global environmental governance is further challenged by fragmentation. UNEP plays a central role, but other critical responsibilities fall to the UN Development Programme, the World Bank, the Commission for Sustainable Development, and environmental treaty secretariats.³⁴ These entities often do not cooperate well. There is little attempt to achieve synergies, rationalize budgets, or divide up tasks.³⁵ The World Bank, United Nations Industrial Development Organization, and OECD, as well as the Climate Convention Secretariat, all partly claim responsibility for climate change work, for instance, with little regard to a thoughtful division of labor.

Even more distressing is the lack of alignment between global-scale *economic* decisionmaking and parallel efforts at *environmental* protection.³⁶ Yet these linkages are fundamental

<http://www.ecos.org/section/states/spending> (last visited Sept. 14, 2008).

³² Maria Ivanova, *Moving Forward by Looking Back: Learning from UNEP's History*, in *GLOBAL ENVIRONMENTAL GOVERNANCE: PERSPECTIVES ON THE CURRENT DEBATE* 26, 41 (Lydia Swart and Estelle Perry, eds. 2007).

³³ MARIA IVANOVA, YALE CTR. FOR ENV'TL LAW AND POL., *CAN THE ANCHOR HOLD?: RETHINKING THE UNITED NATIONS ENVIRONMENT PROGRAMME FOR THE 21ST CENTURY* 37–38 (Yale School of Forestry & Env'tl. Studies 2005).

³⁴ See Esty & Ivanova, *supra* note 8, at 182–83.

³⁵ See Hempel, *supra* note 8, at 7, 32, 45.

³⁶ Steve Charnovitz, *World Trade and the Environment: A Review of the New WTO Report*, 12 *GEO. INT'L ENVTL. L. REV.* 523, 534–35 (2000); Daniel C. Esty, *Environmental Governance at the WTO: Outreach to Civil Society*, in *TRADE, ENVIRONMENT, AND THE MILLENNIUM* 120–21 (Gary P. Sampson & W. Bradnee Chambers eds., United Nations Univ. Press, 2d ed. 2002) (stating that the WTO must establish its legitimacy in part by better incorporating NGO participation

and critical to success in pursuing multiple goals simultaneously—including economic development, poverty alleviation, and environmental conservation.

More needs to be done, in particular, to manage the relationship between environmental policy and the international trading system. The work of the World Trade Organization to promote trade liberalization has potentially significant environmental implications, particularly insofar as market access commitments often entail “disciplines” on regulation. Similarly, environmental policy choices—for instance, the form of greenhouse gas emissions controls—can dramatically affect trade flows. Despite the obvious interconnections, little coordination occurs. Nor does much effort get put into integrating the work of UNEP with the projects of the UN Development Programme or the multilateral development banks. Likewise, UNEP links to the World Health Organization are unsystematic, limiting cooperation on global public health matters.

Given this record, the time has come to dismantle the UN Environment Programme and reorganize our efforts in the global environmental governance arena. There has long been a debate about whether UNEP reform might be better than starting fresh.³⁷ But a consensus has emerged that things have gone so badly off track that dramatic change is needed.³⁸

IV. A NEW MODEL FOR INTERNATIONAL ORGANIZATIONS

With the climate change imperative looming, there exists an opportunity to create a new type of international organization. An effective Global Environment Organization (GEO) need not be a big bureaucracy. To the contrary, a streamlined agency that consolidates many of the entities identified earlier, supported by a decentralized and largely virtual structure of outside experts

and involving environmental groups).

³⁷ See Calestous Juma, *The Perils of Centralizing Global Environmental Governance*, 42 ENVIRONMENT 44 (2000); Konrad von Moltke, *The Organization of the Impossible*, 1 GLOBAL ENVTL. POL. 23, 25, 27 (2001).

³⁸ See Charnovitz, *supra* note 8, at 327–29; ADIL NAJAM ET AL., GLOBAL ENVIRONMENTAL GOVERNANCE: A REFORM AGENDA 12 (2006); Adnan Amin, *UNEP – Reform Perspectives Two Years after Johannesburg*, in UNEP – TOWARDS AN INTERNATIONAL ENVIRONMENTAL ORGANIZATION 113–18 (Andreas Rechkemmer ed., Nomos 2005).

(national government officials, academics, business, and non-governmental organization (NGO) leaders) would make more sense. With a “global policy network” at its core and a modern organizational design that takes advantage of the technologies of the Information Age, such a GEO could move quickly to take up new issues, bring analytical rigor to hard problems, and be entrepreneurial in the development of worldwide response strategies—all with much lower political and financial overhead than traditional international organizations.

In revitalizing global environmental governance, *focus* must be the watchword. UNEP has gotten bogged down carrying out projects in dozens of countries. While independently worthy, these local-issue-oriented activities should be undertaken by national governments supported by the UN Development Programme or the World Bank. Instead, priority should be given to inherently transboundary problems, including management of the oceans, atmosphere, and other global commons resources.³⁹ The GEO should serve as a convening authority, engaging not only governments but also civil society at large, including business and NGO leaders. A vibrant and focused new organization could provide the data foundation needed for good environmental decisionmaking; an analytic capacity to gauge risks, assess costs and benefits, and evaluate policy options comparatively; a mechanism for leveraging private sector and governmental resources deployed at the international level; and a forum for negotiations and dispute settlement.

With regard to problems that are *common* across nations but not *transboundary*—such as water quality, water availability, and local air pollution—a limited global role makes sense. The GEO should undertake data collection and analysis, identify best policy practices, and provide a structure for sharing information. The importance of sound data—comparable across countries—cannot be over-emphasized. As the Environmental Performance Index (developed by a team at Yale and Columbia’s Earth Institute)

³⁹ Inge Kaul et al., *Defining Global Public Goods, in* GLOBAL PUBLIC GOODS: INTERNATIONAL COOPERATION IN THE 21ST CENTURY 2–19 (Inge Kaul et al. eds. Oxford Univ. Press 1999); ERNESTO ZEDILLO & TIDJANE THIAM, INT’L TASK FORCE ON GLOBAL PUB. GOODS, MEETING GLOBAL CHALLENGES: INTERNATIONAL COOPERATION IN THE NATIONAL INTEREST FINAL REPORT 31 (2006).

demonstrates, a data-intensive look at pollution control and natural resource management issues generates useful information on policy leaders and laggards, generating competitive pressure for better results, especially within “peer groups.”⁴⁰ This sort of benchmarking, on an issue-by-issue basis, also generates information on regulatory models that should be more broadly disseminated and on failed approaches that should be abandoned.

V. CORE PRINCIPLES

As foundational principles for the new entity, I would reassert the importance of the Polluter Pays Principle as well as the concept of “common but differentiated responsibility.” Cost internalization of externalities is well understood in theory, oft-repeated in international dialogues, and yet, frequently not made central to policy practice. The response to climate change seems likely to break new ground in this regard. The EU’s emissions trading system fits the new model of focusing on price signals and economic incentives. The U.S. political debate also seems likely to promote a “cap and trade” approach to curbing greenhouse gas emissions that reestablishes a central commitment to the Polluter Pays Principle.

The domestic argument for adopting economic-incentive-based approaches to environmental protection is mirrored at the global scale. Market mechanisms facilitate the governance process by better accommodating diversity, allowing a degree of flexibility, and promoting innovation. As discussed in detail below, environmental policy across all levels of governance needs first and foremost to promote innovation and technology development. Recognition that almost all of society’s environmental progress has come from technology breakthroughs⁴¹ leads to several questions: How do we create the maximum degree of innovation? What incentives will draw the private sector into technology development in response to climate change and other environmental challenges? How do we harness an entrepreneurial spirit within the environmental sector?

⁴⁰ Esty et al., *supra* note 14, at 8.

⁴¹ MARIAN R. CHERTOW & DANIEL C. ESTY, THINKING ECOLOGICALLY: THE NEXT GENERATION OF ENVIRONMENTAL POLICY 136–50 (Yale Univ. Press 1997).

VI. TOWARD INNOVATION-BASED ENVIRONMENTAL POLICY

Fundamentally, the focus of environmental research and development activity must shift from the government to the private sector as the central actor. Big companies and small, old-line manufacturing businesses and high-tech enterprises, venture capitalists, corporate R&D programs, and the creative spirits that exist across the world must all be induced into technology development efforts. As a society, we need environmental innovation across the widest imaginable array of breakthrough possibilities. Success will require luring hundreds of billions of dollars (and euros, pounds, yen, and renminbi) into the “clean tech” market space, driving investment in energy efficiency and resource productivity technologies, emissions controls, and alternative energy as well as “sidebets” on carbon capture and storage. A global marketplace increases the scale and diversity of investments in environmental goods and services—and promises a payoff for successful innovations.

This private sector emphasis does not mean that government goes away. To the contrary, public officials must still identify the problems, set the standards, and be even more clever in structuring incentives and regulations so as to engage businesses across the country and the world. The key is to expand the R&D talent base and funding pool—from government appropriations and a few thousand EPA analysts thinking industry-by-industry about what piece of pollution control technology to mandate as “best available technology”—to engaging millions of businesses and their hundreds-of-millions of employees in the search for solutions to environmental challenges.

The logic of innovation argues not only for cost internalization—harm charges—as the centerpiece of the regulatory regime, but more specifically for the clearest and strongest price signals possible. Collaboration between global and national scales to create a worldwide clean tech marketplace offers the maximum inducement to private sector investors. Not only does a worldwide clean tech market increase the scale and diversity of technology development efforts, it would also position entrepreneurial companies in the developing world, and in emerging Asia in particular, to benefit from a commitment to global environmental protection. Getting developing countries, especially China and India, behind efforts to combat climate

change and other global challenges will be critical to the international negotiation dynamic. These countries are an inescapable part of the global problem. We must ensure that they are also part of the global solution. Given the central importance of an innovation-based environmental protection model, perhaps this should be the first principle (not the fifth) of the effort to break the environmental law logjam.

VII. BURDEN SHARING

Global-scale policymaking is further hampered by conflicting views about equity and fairness. The Kyoto Protocol's failure can be traced in no small measure to the lack of real agreement on burden sharing or who should pay for emissions controls and who should receive the benefits.⁴² With this challenge in mind, I would underpin a revitalized global environmental governance system with a second core principle: "common but differentiated responsibility." *Common*, of course, means that every nation has a role to play and must commit to emissions limits as part of a global-scale action plan. *Differentiated* means the expectations with regard to the specific targets and timetables for action will vary depending on a nation's level of development. While the United States and Europe will need to reduce greenhouse gas emissions dramatically in the coming years, China and India should be asked to limit the rate of growth of their emissions as well.

The Montreal Protocol provides a useful model in this regard. The ozone-layer-protection regime included a common commitment to phase down (and ultimately phase out) the use of CFCs and other gases that damage the earth's protective ozone layer. But running alongside this common commitment was a strategy that reflected differentiated circumstances. Richer countries subsidized the switch to CFC substitutes of the poorer ones, thus providing a "carrot" to promote ratification of the treaty and implementation of its requirements. But the Montreal Protocol also included "sticks," notably provisions to discipline free riders. The Protocol's London Amendments authorized parties to the

⁴² Lasse Ringius et al., *Burden Sharing and Fairness Principles in International Climate Policy*, 2 INT'L ENVTL AGREEMENTS: POL., L. & ECON. 1, 14-17 (2002).

treaty to invoke trade measures against those who either failed to ratify or failed to implement the agreement's requirements.⁴³

CONCLUSION

While the practical and political challenges inherent in global environmental governance are substantial, the only real alternative to a systematic response to problems such as climate change is the status quo of fragmented, ad hoc, and ineffective efforts. It is time to acknowledge the importance of having a degree of regulatory activity at the global scale. Constructing an appropriate structure of law and institutions to fill this role parallels the domestic "logjam" challenge. At the same time, we must take seriously the dissimilarities from the national scale. The logic for collective action at the scope of the harm to be addressed or the public good to be provided is overwhelming. Progress can be made by building on this base of theory, while also learning from recent international policymaking experience and tempering our ambitions with a clear understanding of the limits of supranational decisionmaking.

⁴³ Scott Barrett, *Montreal Versus Kyoto*, in *GLOBAL PUBLIC GOODS: INTERNATIONAL COOPERATION IN THE 21ST CENTURY 192-95* (Inge Kaul et al. eds. 1999).