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**The Emergence of Global Environmental Law**

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## **The Emergence of Global Environmental Law**

By Tseming Yang & Robert V. Percival

### **Abstract:**

With the global growth of public concern about environmental issues over the last several decades, environmental legal norms have increasingly become internationalized. This development has been reflected both in the surge of international environmental agreements as well as the growth and increased sophistication of national environmental legal systems across the world. A number of trends, such as globalization and international development aid efforts, have shaped the global rise of environmental law. The result is the emergence of a shared set of legal principles and norms regarding the environment, such that one can arguably describe it as a common body of law. The emergence of what we call “global environmental law” already has and will likely continue to have profound implications for the implementation, practice, and development of environmental law worldwide.

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## The Emergence of Global Environmental Law

By Tseming Yang<sup>1</sup> & Robert V. Percival<sup>2</sup>

Worldwide growth of public concern for the natural environment has been one of the most important developments in recent decades. The continuously expanding global economy has helped connect societies and their environmental fates ever more closely. At the same time, environmental problems also increasingly transcend national borders and pose serious challenges to the health of the planet. The development of more effective environmental laws and legal systems throughout the world has thus become critical to directing economic development and growth onto a path of environmental sustainability.

The responses have been surprisingly progressive. Countries are resorting to transplanting law and regulatory policy innovations of others nations, even when they have very different legal and cultural traditions. Short of deliberate copying, many national regulatory initiatives also exhibit design and functional similarities that reveal a growing convergence around some principal approaches to environmental regulation. Finally, increased cross-border collaboration between governments, NGOs, multinational corporations and the growth of transnational environmental networks has also significantly influenced the development of environmental law and regulation. Such growing international linkages are blurring the traditional divisions between private and public law and domestic and international law, promoting integration and harmonization. The result has been the emergence of “global environmental law” – a field of law that is international, national, and transnational in character all at once.<sup>3</sup>

American environmental lawyers will find much that looks familiar in global environmental law. But there is also much that is not. Take for example China’s environmental contracting system between the central and local governments which is unlike anything in United States law. American lawyers will also discover that environmental principles, methodologies, and approaches they believe to be their own now exist in many other systems, such as environmental impact assessments. And they can profitably learn from international views of important environmental policy issues, such as regulatory non-compliance and environmental human rights. Global environmental law provides a global context for environmental regulatory issues.

We cannot set out in detail the substantive governing principles of global environmental law within the limited confines of this piece. It is an emergent system that is made up of the legal principles developed by national, international, and transnational systems. Defining and describing it would be no easier of a task than setting out the

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<sup>2</sup> Robert F. Stanton Professor of Law and Director, Environmental Law Program, University of Maryland School of Law.

<sup>3</sup> To facilitate the teaching of global environmental law, we are writing the first casebook on “Global Environmental Law,” which will be published by Aspen Law & Business in 2009. The casebook will include the results of an intensive, two-year effort to gather environmental case studies from all over the world. The casebook will present cases and materials that illustrate the principal approaches to environmental law employed by countries throughout the world. We hope that it will be a vehicle for spawning a new approach to teaching environmental law that presents it in a global context.

governing principles of national, international, and transnational environmental law. More importantly, it would require a far longer exposition than we are prepared to engage in here.<sup>4</sup>

Nevertheless, the trends of transplantation, convergence, integration, and harmonization are real. They are contributing to the emergence of a set of norms and principles that are global in nature, not just national or international. As our discussion below illustrates, global environmental law is the result of sovereign national initiatives to improve and advance national legal systems as well as coordinated efforts to integrate and harmonize environmental norms.

The dominant political and economic influence of the United States in the world today creates a risk that American lawyers will misperceive the emergence of global environmental law simply as the extension of U.S. environmental law to the rest of the world.<sup>5</sup> To be sure, some of the most important innovations in U.S. environmental law – the creation of national parks, environmental assessment requirements, and public access to information requirements -- have been widely adopted and uploaded into international treaties.<sup>6</sup> But there can be no question that the American politics and law of the environment is increasingly affected and shaped by international developments and trends. On the issue of global climate change, for example, some might even argue that the U.S. has become a follower of initiatives led by the international community. In short, American environmental lawyers have much to learn from the rest of the world.

This trend has profound implications for teaching and the development of environmental law. Future lawyers and policymakers will need to be educated in environmental law without segregating it into particular national or international branches of law. Moreover, the design and implementation of national and international environmental regulatory systems can be improved through systematic study and understanding of global environmental law.

Section I begins this article by describing some of the global trends that evidence the emergence of global environmental law. It also articulates the conceptual framework that makes up “global environmental law” and the main pathways through which it is being created: primarily transplantation and convergence, and to a lesser extent by integration and harmonization,. In section II, we examine some of the forces that are driving crystallization of this new field. Why is global environmental law emerging at this point in time? In section III, we explain the implications for the practice and development of environmental law across the globe. We will finish with a few words

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<sup>4</sup> However, as noted above, we are engaged in such an effort as a separate endeavor.

<sup>5</sup> Shapiro, *supra* note \_\_\_, at 63.

<sup>6</sup> One notable exception has been tort litigation against companies that expose the public to environmental risks. It has not been a prominent feature of environmental law in countries that do not share the common law tradition. Yet exceptions are emerging. In Japan, which does not have a litigation-friendly culture, a group of seven automakers settled a decade-old Tokyo air pollution case in August 2007 by agreeing to pay \$1.2 billion yen (\$10 million) to patients with respiratory diseases. “Air Pollution: Seven Automakers Agree to Pay Yen 1.2 Billion to Injured Parties to Resolve Tokyo Lawsuit, Daily Environment Report, Aug. 16, 2007. After U.S. tobacco companies reached a mega-billion dollar settlement with state governments in 1998 for reimbursement of added health care costs, a spate of such lawsuits has surfaced in other parts of the world, most recently in Nigeria. Judicial review also is gradually becoming an important feature of foreign legal cultures with traditions dissimilar to the common law. Tomas V. Ginsburg, CONFUCIAN CONSTITUTIONALISM: GLOBALIZATION AND JUDICIAL REVIEW IN KOREA AND TAIWAN (October 2001).

about what this might mean for the teaching and practice of environmental law and address some of the applications of this to the case of China.

## I. What is Global Environmental Law?

We begin by illustrating the globalization of environmental law through the example of chemicals and product regulation. We then examine the concept of global environmental law by putting the idea into the context of the literature. Finally, we explain the pathways by which global environmental law is being created.

### A. One Manifestation of Global Environmental Law: The Growing Regime of Global Product and Chemical Regulation

One highly visible area in the evolution of global environmental law has been the regulation of products and materials routinely traded and shipped throughout the world: chemicals and consumer goods. Corporations that operate in markets across the globe must now deal with a wide variety of national and regional initiatives to control the environmental risks of chemicals and products.

During the 1980s and 1990s the U.S. chemical industry successfully fended off domestic attempts to require pre-market toxicity testing of its products. In 1997 a U.S. environmental NGO publicized the fact that basic toxicity data was unavailable for the vast majority of thousands of high production volume (HPV) chemicals produced or imported into the country in volumes of more than one million pounds per year.<sup>7</sup> A year later EPA launched a voluntary testing program (now known as the Extended High Production Volume (EHPV) program) with the cooperation of the industry's trade association. This initial 1998 HPV "Challenge" program encouraged companies to conduct testing to gather health and environmental effects data for high volume chemicals used or produced in the U.S. In 2005, the program was expanded to include additional chemicals whose volume now qualified them for screening. It also broadened the scope of the information collected to include exposure and use data.<sup>8</sup>

Recognizing similar needs, but taking the voluntary screening approach one step further, Canada adopted a more protective approach. In 1999 it created the New Substances Notification Program pursuant to the Canadian Environmental Protection Act (CEPA 1999). For more than 23,000 chemicals already in use in Canada then, CEPA 1999 required "categorization" under the Domestic Substances List (DSL) by 2006. This resulted in a determination that more than 85% of those chemicals did not require further

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<sup>7</sup> Environmental Defense Fund, "Toxic Ignorance: The Continuing Absence of Basic Health Testing for Top-Selling Chemicals in the United States." (1997). Available at [http://www.edf.org/documents/243\\_toxicignorance.pdf](http://www.edf.org/documents/243_toxicignorance.pdf)

<sup>8</sup> Chemical reporting through this "Extended HPV" program is submitted by industry sponsors to the American Chemical Council, which tracks the information. As of June 2007, more than 2,200 HPV chemicals have been sponsored: 1,400 directly through the HPV Challenge Program and over 860 chemicals indirectly through international efforts. EPA, "High Productive Volume Challenge," <http://www.epa.gov/HPV/>; American Chemistry Council, "Extended HPV Initiative," [http://www.americanchemistry.com/S\\_ACC/sec\\_policyissues.asp?CID=432&DID=1493](http://www.americanchemistry.com/S_ACC/sec_policyissues.asp?CID=432&DID=1493).

attention at that time. It also generated information on the remaining 4,000 chemicals, identifying those that warranted top priority for regulation.<sup>9</sup>

Canada's program is similar to the European Union's more extensive new REACH program (Registration, Evaluation, Authorization and Restriction of Chemicals)<sup>10</sup> that was approved in December 2006 and entered into force on June 1, 2007. The provisions of REACH will be phased in over an 11-year period and establish a comprehensive registration scheme for 30,000 chemicals with sales of over one ton per year. It also provides for tiered testing to evaluate the risks posed by the substances. The effects will extend far beyond the EU because the program requires importers to register their chemicals. Even companies downstream will have to provide details concerning the use of chemicals in their products.<sup>11</sup> Chemicals determined through testing to be substances of "high concern" may eventually be phased out.<sup>12</sup> Thus, companies doing business with the EU eventually would also have to shift to less toxic materials in their products.

In 2003 China, the second largest consumer and the third largest producer of chemicals in the world,<sup>13</sup> adopted a set of regulations covering new chemical substances.<sup>14</sup> Like the REACH program, China's law requires registration and toxicity testing of new chemical substances. The law requires that testing be performed in China by Chinese laboratories, though the procedure is simplified for chemicals that have been listed as in use in at least four other countries. Japan<sup>15</sup> and Korea<sup>16</sup> have also adopted new chemical control laws.

In the past when developed countries banned the use of certain hazardous substances, producers redoubled their efforts to export them to the developing world. While it is possible that many of these chemicals will end up going to such markets, globalization of environmental concerns has made this more difficult. Lead gasoline is disappearing from the developing world not long after developed countries phased out its use.<sup>17</sup> Sixteen years after a U.S. court struck down EPA's regulations phasing out nearly all uses of asbestos,<sup>18</sup> many other countries with less developed systems of

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<sup>9</sup> Government of Canada, "Chemical Substances,"

[http://www.chemicalsubstanceschimiques.gc.ca/categor/what-quoi/index\\_e.html](http://www.chemicalsubstanceschimiques.gc.ca/categor/what-quoi/index_e.html)

<sup>10</sup> Registration, Evaluation, Authorization and Restriction of Chemicals, Regulation (EC) No. 1907/2006

<sup>11</sup> European Commission, Environment Directorate General, "Reach in Brief," (Oct. 2007), available at: [http://ec.europa.eu/environment/chemicals/reach/pdf/2007\\_02\\_reach\\_in\\_brief.pdf](http://ec.europa.eu/environment/chemicals/reach/pdf/2007_02_reach_in_brief.pdf)

<sup>12</sup> The program is applicable to all new chemicals as of June 2008. Pre-registration will be required by December 2008 and formal regulations for existing chemicals will be developed between 2010-2018.

<sup>13</sup> State Environmental Protection Administration, Measures for Environmental Management of New Chemical Substances (Sept. 12, 2003), available at <http://www.ChinalawInfo.org> . . . .; Charles R. McElwee, "China: An Introduction to Current Environmental Trends," International Environmental Law Committee Newsletter, 35, at 39, Oct. 2007, available at:

<http://www.abanet.org/environ/committees/intenviron/newsletter/oct07/IELCOct07.pdf>

<sup>14</sup> Provisions on the Environmental Management of New Chemical Substances, enacted 12 Sept. 2003

<sup>15</sup> Law on the Control of Examination and Manufacture of Chemical Substances, <http://www.env.go.jp/en/laws/chemi/index.html>

<sup>16</sup> Toxic Chemicals Control Act,

[http://eng.me.go.kr/docs/common/common\\_view.html?idx=26&av\\_pg=1&mcode=10&classno=14](http://eng.me.go.kr/docs/common/common_view.html?idx=26&av_pg=1&mcode=10&classno=14)

<sup>17</sup> One reason U.S. consumers were so shocked by the recall of imported toys found to contain lead-based paint is because of the widespread assumption that the use of lead-based paint had long been discontinued.

<sup>18</sup> "Much of the original rule was vacated and remanded by the U.S. Fifth Circuit Court of Appeals in 1991. Thus, the original 1989 EPA ban on the U.S. manufacture, importation, processing, or distribution in



environmental law have banned asbestos.<sup>19</sup> The health risks of asbestos are now so obvious that even the World Trade Organization (WTO) has upheld prohibitions on its import despite claims by producers that such bans violate free trade laws.<sup>20</sup>

European countries also have been influential in the development of global environmental law through their adoption of extended producer responsibility (EPR) regulations. Germany pioneered them in 1991 when it required manufacturers to take back and recycle all bottles, cans, boxes and other packaging materials. The program was so successful that it was quickly adopted by several other European countries, a number of Canadian provinces, and then endorsed by the EU.<sup>21</sup> Similarly, the EU has acted to control the impact of electronic wastes through use restrictions on certain hazardous substances in electrical and electronic equipment (ROHS).<sup>22</sup>

China has also embraced producer responsibility and adopted its own version of the ROHS program to reduce the use of hazardous substances in electronics products.<sup>23</sup> As of March 1, 2007, all electronic information products must contain recyclability markings and indications of the period of years during which the product is environmentally safe. Producers must also disclose the amount of six hazardous substances contained in these products. During the second phase of this program a list of products using mature technologies, where a reduction of the risk from these six substances is feasible, will be published and a timetable to reduce the risk developed. A draft regulation requires electronic equipment manufacturers to identify recyclable and nonrecyclable parts of their products and to arrange for disassembly and recycling at the end of their useful life.<sup>24</sup>

A review conducted in 2005 of more than 200 regulatory developments having significant impacts on businesses worldwide found that Western Europe was the clear leader in environmental product regulation followed by Eastern Europe and North America, with South America close behind.<sup>25</sup> Despite regional differences, however,

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commerce of many asbestos-containing product categories was set aside and did not take effect,” EPA Region 10, Clarification on Ban on Asbestos-Containing Materials, April 1999, <http://yosemite.epa.gov/R10/OWCM.NSF/ff9b947f011c3690882564e40077055b/43ec9d1bd99e460588256770007c17a8?OpenDocument>

<sup>19</sup> Approximately forty countries have banned the future use of asbestos, according to the Director of International Labour Office’s SafeWork program, “ILO to Promote Global Asbestos Ban,” Hazards Magazine, available at: <http://www.hazards.org/asbestos/ilo.htm>

<sup>20</sup> World Trade Organization, European Communities – Measures Affecting Asbestos and Asbestos-Containing Products (WT/DS135/R. Sept. 18, 2000).

<sup>21</sup> Bette Fishbein, Senior Fellow, Sustainable Products and Practices, INFORM Inc., “Extended Producer Responsibility: A New Concept Spreads Around the World,” Rutgers University Demanufacturing Partnership Program Newsletter, Vol. 1, No. 2 Winter 1996.

<sup>22</sup> Directive 2003/108/EC of the European Parliament and of the Council of 8 December 2003 amending Directive 2002/96/EC on waste electrical and electronic equipment, OJ L 345/106 (WEEE) and Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (ROHS).

<sup>23</sup> Ministry of Information Industry, “Management Methods for Controlling Pollution Caused by Electronic Information Products Regulation” (“China RoHS”), Feb. 28, 2006, available at <http://www.lawinfochina.com>.

<sup>24</sup> *Id.* at art. 13.

<sup>25</sup> Dae Young Park, *Riding the Tide of Global and European Environmental Regulations: Best Practices of Global Companies Responding to Global and European Environmental Regulations* at 20, available at <http://ssrn.com/abstract=817285>. European countries and the EU have focused in particular on “(a)

business operations are positively affected worldwide. For example, the difficulty of adhering to separate product regulation standards in different jurisdictions has led some multinational companies to comply with the most stringent directive to which they are subject on a global basis. Thus, regulatory innovations spread not only through the work of government regulators but also the responses of the regulated communities.

## B. The Concept of Global Environmental Law

Legal education traditionally has organized fields of law into distinct categories, separating private from public law and domestic from international law. Yet the forces of globalization already have begun to blur these boundaries in fundamental ways. Advancements in global information flows have made it easier for countries to borrow legal and regulatory policy innovations from each other. Elements of national environmental law have been “uploaded” into international agreements and international legal norms have in turn been “downloaded” into national and regional systems.<sup>26</sup>

Of course, globalization of law is occurring not only in the environmental law field, but also in other areas of public law such as antitrust and securities regulation. But as Martin Shapiro noted some time ago, “[p]erhaps globalization is clearest and most dramatic in environmental law.”<sup>27</sup>

Global environmental law’s content is comprised of the common set of legal principles developed by national, international, and transnational environmental regulatory systems. It includes substantive goals, methodological principles, and procedural approaches. Among the most readily identifiable principles and tools, for example, are the precautionary principle, “polluter pays,” environmental impact assessments, and pollution permitting. One might also readily assert that protection of public health and the integrity of ecological systems are among the most important substantive goals in environmental law.<sup>28</sup>

As we noted at the outset, the evolving nature of the field make definition of its contours difficult. Nor can one set out in detail what global environmental law entails any more readily than one could set out the governing principles of national, international, and transnational environmental law. We plan to make that effort in a separate and longer exposition.<sup>29</sup> Nevertheless, there are illustrations of specific trends, descriptions of the field’s contours, characteristics, and drivers, and analysis of the ramifications that we can provide.

For example, as in other areas of law, there are obvious variations among national and local environmental regulatory systems. Such differences are oftentimes rooted in a country’s particular culture and social mores or political idiosyncracies. Fundamental ecological and public health considerations, however, impose significant constraints on regulatory solutions. After all, environmental law is concerned not only with the

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aggressive product-specific regulatory controls for waste management; (b) use and marketing control of chemicals; and (c) leadership in climate change and energy efficiency.” *Id.*

<sup>26</sup> Jonathan B. Weiner, *Something Borrowed for Something Blue: Legal Transplants and the Evolution of Global Environmental Law*, 27 *ECOL. L. Q.* 1295 (2001).

<sup>27</sup> Martin Shapiro, *The Globalization of Law*, 1 *Ind. J. Glob. Leg. Stud.* 37, 51, 64 (1993).

<sup>28</sup> However, like any regulatory and legal regime, there are bound to be significant, even fundamental, disagreements about other goals, especially the role of economic development.

<sup>29</sup> See text accompanying note \_\_\_\_.

relationship of humans with each other but also with the inextricable connection of humanity and the common exterior world -- the global environment as a whole and its many component parts.<sup>30</sup> That relationship requires that environmental law be defined and structured by reference to the basic physical, ecological, and physiological characteristics of humans and the environment. Regulatory tactics have thus coalesced around a number of principal approaches. It has also led to environmentalism becoming one of the few defining sets of values that appear to command widespread support across the world.<sup>31</sup>

Another obvious characteristic is its focus on the global environment as a whole. Regional, national, and local problems remain significant as components of global environmental ills. Governing legal norms and regulatory schemes, however, must extend beyond national jurisdictions. The rapid expansion of international environmental law and growth of multilateral environmental agreements has attempted to meet these needs. Yet, traditional international law, whose norms and obligations have been directed almost exclusively at state actors, has been unable to address many of the relevant issues. Instead, modern international legal regimes increasingly seek to affect private behavior.

As discussed in greater detail below, the shift in focus toward private behavior, primarily business conduct, is especially visible in the climate change context. The Kyoto Protocol's Clean Development Mechanism and the international emission trading system have forced businesses to consider not only the direct implementing requirements of domestic regulators, but also more generally applicable requirements of international institutions.<sup>32</sup> A more unusual example is the above-mentioned EU REACH program, which is profoundly affecting companies throughout the world, whether they are headquartered in states that are members of the EU or not.<sup>33</sup> The EU's directive itself applies only to its 27 current member states, but it is also having a profound impact on domestic environmental law in many countries outside the EU.

Dean Harold Koh often has referred to the latter as "transnational law" because its effects extend far beyond the nations responsible for adopting it.<sup>34</sup> Mark Tushnet notes that the Mexican historian Carlos Rico Ferrat has tried to popularize the term "intermestic" to describe "issues that are at the same time domestic and international."<sup>35</sup> Regardless of which proposed terminology resonates best, most observers agree that it is no longer useful to draw sharp distinctions between international and domestic law. As

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<sup>30</sup> In that sense, the community of interests that environmental law concerns itself with is not purely a psychological construct but is significantly based on physical relationships and an external reality. *See, e.g.,* Paul Schiff Berman, *From International Law to Law and Globalization*, 43 COLUM. J. TRANSNAT'L L. 485, 517 (2005).

<sup>31</sup> *E.g.,* Philip Shabecoff, *A NEW NAME FOR PEACE: INTERNATIONAL ENVIRONMENTALISM, SUSTAINABLE DEVELOPMENT, AND DEMOCRACY* (1996).

<sup>32</sup> *See generally* discussion *infra* at section II(C)(3).

<sup>33</sup> Under the REACH program, companies must register, report, test, and reformulate their products to reduce their environmental impact. *See* discussion *supra*.

<sup>34</sup> "The most striking change in the law [in the last two decades] is the rise of a body of law that is genuinely transnational -- neither fish nor fowl, in the sense that it is neither traditionally domestic nor traditionally international." Harold Koh, *The Globalization of Freedom*, 26 YALE J. INT'L L. 305 (2001).

<sup>35</sup> Mexico, the Latin North American Nation: A Conversation with Carlos Rico Ferrat, 86 J. AM. HIST. 467, 473 (1999), quoted in Mark Tushnet, *Globalization and Federalism in a Post-Printz World*, *Tulsa Law Journal*, Dec. 2000.

Paul Berman notes, “it is becoming clear that ‘international law’ is itself an overly constraining rubric and that we need an expanded framework, one that situates cross-border norm development at the intersection of legal scholarship on comparative law, conflict of laws, civil procedure, cyberlaw, and the cultural analysis of law, as well as traditional international law.”<sup>36</sup> In the brave new world of global environmental law, the focus is on “transnational legal processes, governmental and non-governmental networks, and judicial influence and cooperation across borders”.<sup>37</sup>

Legal evolution is an exceedingly complex phenomenon, and the practice of “borrowing” law from other legal systems is nothing new.<sup>38</sup> As Dean Koh points out, in the commercial law area, “the law merchant has gone from transnational custom to domestic common law to domestic statutory law to international treaty law” over the course of a few centuries.<sup>39</sup> Such developments are now occurring at an unprecedented scale. As legal systems cope with the consequences of globalization, forms of “global law” are emerging at an unprecedented scale that affect many different areas of law.<sup>40</sup>

Jonathan Wiener has used the idea of global environmental law to describe the evolution of environmental law from a distinctly national enterprise to international frameworks. He focused in particular on the adoption of U.S. pollution trading and integrated pollution management principles in the U.N. Framework Convention on Climate Change and the Kyoto Protocol. As Professor Wiener also pointed out, such efforts of adaptation, are not mere coincidence but driven by the emerging recognition of global public goods, such as the earth’s atmospheric climate system for example. As a matter of globalization, such “trans-echelon borrowing,” as he calls the adoption of national legal principles by international regimes, demonstrates that environmental law principles are not only being transferred -- or “borrowed” -- between national legal systems, but also transferred from national to international systems.

Professor Wiener’s focus on “trans-echelon borrowing” provides a powerful lens through which to understand the evolution of global environmental law. However, we also believe that it is only a partial description of the trends that are contributing to the emergence of global environmental law and the implications for its practice and development. We see global environmental law not only as describing “inter-echelon” borrowing of environmental legal principles between national and international systems, or, for that matter, as simply more “traditional” borrowing among nations, but more generally as an emerging set of independent and convergent legal principles.

As sovereign national initiatives to improve and coordinate national environmental law systems combine with civil society and business-led efforts to solve

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<sup>36</sup> Paul Schiff Berman, *From International Law to Law and Globalization* 43 *Columbia J. Transnational L.* 485 (2005).

<sup>37</sup> *Id.* at 489. This ultimately may somewhat expand the conception of what counts as law. According to Berman, in this new “transnational century” there are “networks of governmental and non-governmental organizations” (including terrorist networks) that can “disseminate alternative normative systems across a diffuse and constantly shifting global landscape.” *Id.* at 492.

<sup>38</sup> Alan Watson, *Legal Transplants: An Approach to Comparative Law* (2d ed. 1993).

<sup>39</sup> Harold Koh, “On Law and Globalization,” *American Law Institute, Remarks and Addresses at the 83<sup>rd</sup> Annual Meeting*, May 17, 2006, at 81.

<sup>40</sup> *See, e.g.,* Benedict Kingsbury, Nico Krisch, Richard B. Stewart & Jonathan B. Wiener, *The Emergence of Global Administrative Law: Foreword: Global Governance as Administration – National and Transnational Approaches to Global Administrative Law*, 68 *LAW & CONTEMP. PROB.* 1 (2005); Beverley McLachlin, *Criminal Law: Towards and International Legal Order*, 29 *Hong Kong L. J.* 448 (1999).

environmental problems, global environmental law is gradually emerging as a new field. We explore these trends and their ramifications in more detail below.

### C. The Evolution of Global Environmental Law

Global environmental law is emerging through multiple pathways. Most dominant are deliberate efforts of transplantation and harmonization. Other influences have been trends of convergence and international integration. Three developments across the world are illustrative: 1) virtually universal adoption of environmental impact assessment processes in national and international regulatory regimes; 2) growing involvement of civil society participants; and 3) the growing international and transnational regime governing global climate change.

#### 1. Transplantation: Environmental Impact Assessment

Jonathan Wiener's description of "trans-echelon" borrowing by the Kyoto Protocol negotiators from the U.S. Clean Air Act's pollution trading principles is a highly visible instance of legal transplantation. Yet, it is not the most significant. That designation must be reserved for the international spread of environmental impact assessments, arguably the most widely adopted environmental policy and set of related legal principles across the world.

First adopted in the United States as part of the National Environmental Policy Act of 1969,<sup>41</sup> the tool calls, as its name suggests, for the assessments of environmental impacts of proposed projects. Its purpose is to improve environmental decision-making by requiring that information be gathered about potential environmental effects and potential alternatives to the project or activity at issue. At least in the United States, this tool has largely remained a procedural requirement. There is no mandate for particular substantive action based on the information that is revealed.<sup>42</sup> Nevertheless, the significance of this tool as a mechanism of environmental governance is clear most specifically in how engrained it has become in environmental decision-making worldwide and in the U.S.<sup>43</sup> For example, from 1970-2007, American agencies filed 33,605 EIAs and resulting EISs (Environmental Impact Statements).<sup>44</sup> Since then, the

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<sup>41</sup> Pub. L. 91-190 (1969). *See generally* John Glasson, Riki Therivel, and Andrew Chadwi, INTRODUCTION TO ENVIRONMENTAL IMPACT ASSESSMENT 28 (3<sup>rd</sup> ed.).

<sup>42</sup> *Strycker's Bay Neighborhood, Inc. v. Carlen*, 444 U.S. 223 (1980).

<sup>43</sup> A preponderance of the literature highlights the ubiquity of EIAs around the world, however, not all agree on their effectiveness. *See* John H. Knox, *The Myth and Reality of Transboundary Environmental Impact Assessment*, 96 AM. J. INT'L L. 29; Alan D. Levy, *A Review of Environmental Impact Assessment in Ontario*, 11 J. ENV. L. & PRAC. 173; Jane Holder and Donald McGillivray, TAKING STOCK OF ENVIRONMENTAL ASSESSMENT: LAW, POLICY AND PRACTICE.

<sup>44</sup> ENVIRONMENTAL IMPACT STATEMENTS FILED 1973 THROUGH 2007, available at [http://www.nepa.gov/nepa/EISs\\_by\\_Year\\_1970\\_2007.pdf](http://www.nepa.gov/nepa/EISs_by_Year_1970_2007.pdf) (visited Aug. 26, 2008). Because NEPA only applied to federal actions, many states and some local governments soon followed suit with their own "little NEPAs" or State Environmental Policy acts that addressed activities covered by state law. Most were enacted by 1975. Themes In The Evolution Of The State Environmental Policy Acts (38 Urb. Law. 949). As of 2007, 20 states, the District of Columbia, Puerto Rico, Guam and the city of New York had environmental planning requirements similar to NEPA. *See* State Environmental Planning Information, available at [http://www.nepa.gov/nepa/EISs\\_by\\_Year\\_1970\\_2007.pdf](http://www.nepa.gov/nepa/EISs_by_Year_1970_2007.pdf) (last updated Jan. 11, 2006).

use of environmental impact assessments has spread to many nations, including environmental treaties.

Mexico has adopted impact assessments as part of its 1988 General Law of Ecological Balance and Environmental Protection.<sup>45</sup> China required such processes initially in its Basic Environmental Protection Law and expanded its application in its 2003 Environmental Impact Assessment Law.<sup>46</sup> India adopted it in 1994.<sup>47</sup> Many other countries have impact assessment processes built into their national environmental policy structure.<sup>48</sup> Principle 17 of the 1992 Rio Declaration, now 192 members strong, went as far as explicitly indicating that “[e]nvironmental impact assessment, as a national instrument, shall be undertaken for proposed activities that are likely to have a significant adverse impact on the environment and are subject to a decision of a competent national authority.”<sup>49</sup>

While impact assessment processes are limited in what they attempt to do for the environment and their implementation remains little better than the implementation of environmental laws generally, it is clear that they are changing environmental governance across the world. One of the most dramatic examples occurred in China’s 2005 “Environmental Assessment Storm,” when the then-State Environmental Protection Administration issued orders seeking to halt 30 ongoing large construction projects because of failures to comply with environmental impact assessment requirements.<sup>50</sup> Among the projects was the new Xiluodu dam project on Yangtze river, upstream of the Three Gorges Dam, carried out by the powerful China Three Gorges Dam Project Corporation. Remarkably, after some political wrangling, impact assessments were submitted and fines paid. Although the outcome has been criticized by some as bureaucratic posturing, because the projects were allowed to start up again,<sup>51</sup> the initiative does demonstrate that EIA laws have risen in their significance and can be used with some dramatic effects.

Environmental impact assessment provisions have also proliferated among multilateral environmental agreements,<sup>52</sup> especially since the 1990s. They can now be

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<sup>45</sup> Ley General Del Equilibrio Ecológico Y La Protección Al Ambiente (1988)

<sup>46</sup> Environmental Impact Assessment Law (Zhong guo ren min gong he guo huan jing yin xiang ping jia fa) (2003).

<sup>47</sup> [http://envfor.nic.in/legis/eia/so-60\(e\).html](http://envfor.nic.in/legis/eia/so-60(e).html)

<sup>48</sup> International Environmental Impact Assessment (EIA) Agencies, available at <http://www.nepa.gov/nepa/eia.html>.

<sup>49</sup> The Rio Declaration on Environment and Development, adopted June 14, 1992, U.N. Doc. A/CONF.151/5/Rev. 1 (1992).

<sup>50</sup> Qin Chuan, *All 30 Law-breaking Projects Construction Stopped*, CHINA DAILY, Feb. 3, 2005. The State Environmental Protection Administration also ordered a controversial restoration project at the Yuanminyuan park to be halted because of environmental impact concerns that same spring. Jane Cai, *Restoration of Palace Lake Hangs in Balance*, S. CHINA M. POST, at 5, Apr. 5, 2005.

<sup>51</sup> Ray Cheung, *Watchdog is still a paper tiger, green bodies claim Environmentalists say administration is putting on a show to placate the public*, S. CHINA MORNING POST, at 8, May 6, 2005.

<sup>52</sup> The 1972 Stockholm Declaration on the Human Environment implies the need for environmental impact assessments in calling for more rational and integrated development planning that is compatible with environmental protection. Declaration of the United Nations Conference on the Human Environment, adopted June 16, 1972, U.N. Doc. A/CONF.48/14, reprinted in 11 I.L.M. 1416 (1972). Stockholm Decl. Art. 13-15. Even the Law of the Sea Convention calls for environmental impact assessments. UNCLOS art. 204-206.

found in treaties ranging from the U.N. Framework Convention on Climate Change<sup>53</sup> and the Convention on Biological Diversity<sup>54</sup> to the Stockholm Convention on Persistent Organic Pollutants<sup>55</sup> and the North American Agreement on Environmental Cooperation.<sup>56</sup> As an instrument of managing transboundary environmental matters, the members of the United Nations Economic Commission for Europe, which includes North America, adopted the Espoo Convention in 1991.<sup>57</sup> The Espoo (EIA) Convention requires the application of environmental impact assessments in a transboundary context, “lay[ing] down the general obligation of States to notify and consult each other on all major projects under consideration that are likely to have a significant adverse environmental impact across boundaries.”<sup>58</sup>

In addition to EIA, there are other environmental legal principles that are increasingly being adopted by regulatory systems across the world. For example, air pollution control strategies have been freely borrowed by various jurisdictions. Although Thailand did not establish its first air quality standards until 1992, it now has achieved remarkable progress in improving air quality in Bangkok. In addition to adopting tailpipe emissions standards based on European standards, the country has required the use of cleaner burning fuels and imposed taxes on older polluting vehicles. Particulate levels in Bangkok have fallen by 47 percent (from 83 to 43 micrograms per cubic meter of air) even though the number of vehicles in Bangkok has increased by 40 percent.<sup>59</sup> Similarly, as part of efforts to improve air quality for the 2008 Olympics, the city of Beijing adopted the newest European auto emission standards, the so-called Euro-IV.<sup>60</sup> In short, active efforts of transplantation and adaptation are contributing significantly to the emergence of global environmental law.

## 2. Convergence: The Broadening of Participation in Environmental Governance and Civil Society Involvement

Apart from deliberate acts of borrowing, convergence through independent regulatory evolution has also contributed to the emergence of global environmental law.<sup>61</sup> Common functional goals, governance considerations, and ecological and public health constraints have driven design, implementation, and operation of regulatory systems in

<sup>53</sup> UNFCCC, art. 4(1)(f), adopted May 9, 1982, art. 2, reprinted in 31 I.L.M. 849, 854 (1992).

<sup>54</sup> Convention on Biological Diversity, art. 14, U. N. Doc. DPI/130/7, June 2, 1992, reprinted in 31 I.L.M. 818 (1992).

<sup>55</sup> Stockholm Convention Annex E, May 22, 2001, 40 I.L.M. 532 (2001), available at [http://www.pops.int/documents/convtext/convtext\\_en.pdf](http://www.pops.int/documents/convtext/convtext_en.pdf).

<sup>56</sup> NAAEC art. 1(e) & 10(7).

<sup>57</sup> Convention on Environmental Impact Assessment in a Transboundary Context, done Feb. 25, 1991, 1989 U.N.T.S. 310 (1997), 30 I.L.M. 800 (1991) (entered into force Sept. 10, 1997).

<sup>58</sup> See <http://www.unece.org>. In 2003, the parties adopted a Protocol on Strategic Environmental Assessment “to provide for a high level of protection of the environment, including health. . .” [http://www.unece.org/env/eia/protocol\\_status.html](http://www.unece.org/env/eia/protocol_status.html) “Strategic environmental assessment (SEA) is undertaken much earlier in the decision-making process than project environmental impact assessment (EIA), and it is therefore seen as a key tool for sustainable development. The Protocol also provides for extensive public participation in government decision-making in numeroU.S. development sectors.” *Id.*

<sup>59</sup> Thomas Fuller, *Breathing Easier as the Battle for Blue Skies Pays Off*, N.Y. Times, March 6, 2007.

<sup>60</sup> Shi Jiangtao, *Capital Sets Tougher Emissions Standards*, S. China Morning Post, Feb. 18, 2008.

<sup>61</sup> We define convergence here as unintended similarities as opposed to purposeful copying.

similar directions. For example, greater involvement of civil society in environmental concerns has been reflected in increased activism at the state and local levels when national governments fail to address critical environmental problems. In the U.S., it has been especially visible in the increased activism of lower levels of governmental organizations on global environmental matters and involvement of private actors in promoting global environmental governance.

There is no question that economic competition pressures and the interests of polluters can also be strong at the local level. However, an engaged civil society and affected communities can provide an important voice in regulatory decision-making. Environmental behaviors by businesses and private individuals are ultimately shaped not only by laws and regulation but also by social norms, customs, and expectations,<sup>62</sup> if only because laws and regulations cannot be enforced by government officials all of the time. Voluntary compliance and social pressures must fill in most of the time. Civil society has a critical role in shaping such informal influences.

In the U.S., activism at the state and local levels has been most visible with respect to global climate change. When the United States rejected the Kyoto Protocol to the Framework Convention on Climate Change in 2001, it gave as the primary reason the failure of developing countries such as China and India to commit to similar greenhouse gas reduction goals. Yet, it was a fundamental premise of the Kyoto Protocol that developing countries should not be required to restrict their emissions until after industrialized nations have made significant reductions in their own emissions.<sup>63</sup> After all, the industrialized world contributed most significantly to the problem because of its cumulative emission contribution over many decades and centuries. Moreover, as a matter of fairness, per capita emissions even for rapidly growing economies such as China are still only roughly one-fifth that of the U.S.

Because of national failure in leadership on global environmental matters, several U.S. states have launched their own ambitious initiatives to cut greenhouse gas emissions.<sup>64</sup> California, the world's fifth largest economy, imposed the first limits on emissions of carbon dioxide from mobile sources. In September 2006 it enacted legislation creating comprehensive statewide controls on greenhouse gas emissions.<sup>65</sup> Less than a year earlier, in December 2005, seven northeastern states announced that they would participate in a Regional Greenhouse Gas Initiative (RGGI) designed to create a voluntary cap-and-trade program to control carbon emissions from power plants in the region.<sup>66</sup> The International Council for Local Environmental Initiatives (ICLEI), an association of local governments with a commitment to sustainable development, has also seen a significant growth in membership. ICLEI now has 945 municipal members

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<sup>62</sup> See, e.g., Ann Carlson, *Recycling Norms*, 89 Cal. L. Rev. 1231 (2001). See generally Mancur Olson, *Collective Action*.

<sup>63</sup> Berlin Mandate.

<sup>64</sup> Australia was in a similar position with respect to non-ratification of the Kyoto Protocol, yet involvement by Australian provinces in high-visibility efforts on climate change.

<sup>65</sup> California Global Warming Solutions Act of 2006, available at: [http://www.aroundthecapitol.com/billtrack/text.html?file=ab\\_32\\_bill\\_20060831\\_enrolled.html](http://www.aroundthecapitol.com/billtrack/text.html?file=ab_32_bill_20060831_enrolled.html)

<sup>66</sup> See Anthony DePalma, *Seven States Agree on a Regional Program to Reduce Emissions from Power Plants*, N.Y. Times, Dec. 21, 2005. See generally *Regional Greenhouse Gas Initiative: Memorandum of Understanding 2* (Dec. 20, 2005), available at [http://www.rggi.org/docs/mou\\_12\\_20\\_05.pdf](http://www.rggi.org/docs/mou_12_20_05.pdf) [hereinafter RGGI MOU].



representing more than 300 million people in 66 countries.<sup>67</sup>

These state and local initiatives fall squarely within the best traditions of U.S. environmental law, which generally permits lower levels of government to adopt their own more stringent environmental protection measures if they so choose, so long as they at least meet minimum national standards. Federal standards are meant to guarantee that all the nation's residents will enjoy a clean and healthy environment no matter where they may travel in the country. But what is striking about these new initiatives is that they represent state and local action to tackle a truly global problem. These initiatives have already survived an early key legal test when Vermont's statute was upheld despite arguments that federal law preempted it.<sup>68</sup> Their involvement is evidence of growing understanding of global environmental issues and greater appreciation of (inevitable) regulatory needs that reach far beyond individual jurisdictional responsibilities.

The growth of civil society and business involvement in environmental governance has spawned several quasi-private/quasi-public initiatives to promote more sustainable development policies.<sup>69</sup> Some of these initiatives are the outgrowth of pressure applied by NGOs, such as the Rainforest Action Network (RAN), which began by targeting individual companies and then leveraged initial, company-specific agreements into broader industry campaigns.<sup>70</sup>

One of the more significant ones is represented by the "Equator Principles," spawned in part by concerns about private bank financing of environmentally sensitive projects in the developing world. In June 2003 several large private banks announced the adoption of the "Equator Principles" that committed them to following environmental guidelines developed by the International Finance Corporation and the World Bank when lending to development projects.<sup>71</sup> These principles require the banks to analyze the environmental risks created by projects that they finance, to consider alternative mitigation measures and to establish environmental management plans for the projects to ensure that their project lending does not contribute to environmental harm. A total of 61 financial institutions from 24 countries, accounting for the majority of the world's project financing, have now agreed to abide by the Equator Principles.<sup>72</sup> Because private, multilateral investment flows now dwarf inter-governmental lending, quasi-private

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<sup>67</sup> *Our Members* <http://www.iclei.org/index.php?id=global-members>. ICLEI "provides technical consulting, training, and information services to build capacity, share knowledge, and support local government in the implementation of sustainable development at the local level." *About ICLEI*, <http://www.iclei.org/index.php?id=global-about-iclei>. The association's "basic premise is that locally designed initiatives can provide an effective and cost-efficient way to achieve local, national, and global sustainability objectives."

<sup>68</sup> *Green Mountain Chrysler-Plymouth-Dodge v. Crombie* 508 F.Supp. 295 (D. Vt. 2007).

<sup>69</sup> Some of these initiatives are described in Erik Assadourian, *The State of Corporate Responsibility and the Environment*, 18 GEO. INTL. ENV'T'L L. REV. 571, 583-586 (2006).

<sup>70</sup> For example, since 2000, RAN's Global Finance campaign has successfully challenged the world's largest banks – including Citi, Bank of America, JP Morgan Chase, Goldman Sachs and Toronto Dominion – to stop funding projects that are environmentally damaging. In 2007, Toronto Dominion became the first Canadian bank to adopt a comprehensive environmental policy to guide its financing and operations. [http://ran.org/campaigns/global\\_finance/about\\_the\\_campaign/](http://ran.org/campaigns/global_finance/about_the_campaign/)

<sup>71</sup> See generally Andrew Hardenbrook, *The Equator Principles: The Private Financial Sector's Attempt at Environmental Responsibility*, 40 Vand. J. Transnat'l L. 197 (2007). See also <http://www.equator-principles.com/principles.shtml>.

<sup>72</sup> See <http://www.equator-principles.com>.

initiatives like the Equator Principles have the potential to become significant forces for improving environmental conditions in the developing world. However, because they are voluntary and cannot be enforced through traditional mechanisms of public law, some question whether their commitments can be enforced effectively.<sup>73</sup>

Worldwide activism by civil society organizations and private individuals to promoting environmental protection can also be seen elsewhere. This has been especially true in Europe and North America, where “[o]ver the years it has consistently been citizens who have provided the critical vital catalyst to force creation of new laws, and force governmental agencies to enforce them.”<sup>74</sup> In Asia, the picture has been more mixed, however.<sup>75</sup>

These are but a few examples of the many ways in which global environmental law has evolved away from a system controlled by nation-state actors defending state sovereignty as a paramount principle. Sub-national and local governmental entities, NGOs, and multinational corporations now play a significant role in the articulation and implementation of global norms.<sup>76</sup> They do so through a variety of regional and global entities, some created by treaties. Purely private initiatives are also playing a more important role in shaping global environmental policies. Some companies are now discovering that they have sufficient market power to insist that their suppliers conform to environmental requirements as a condition of doing business with them. For example, major retailers such as Wal-Mart are establishing their own environmental standards for their products. In response to efforts by the NGO Carbon Disclosure Project, Wal-Mart is now asking its suppliers to calculate their climate change footprint and to make the information publicly available.<sup>77</sup>

Increased concern and activism in environmental matters has also spread beyond regulators to the courts. One of the most activist judiciaries has been the Indian court system. In a well-known series of cases, the Indian judiciary used its powers of judicial review to broadly shape the interpretation of environmental rights in India’s Constitution to protect public health and the environment.<sup>78</sup> Thus, air quality in New Delhi improved after the Supreme Court of India mandated that diesel buses be replaced with compressed

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<sup>73</sup> For a critical appraisal of voluntary business initiatives to protect the environment, see David Barnhizer, *Waking from Sustainability’s “Impossible Dream”: The Decisionmaking Realities of Business and Government*, 18 GEO. INTL. ENV’T L. REV. 595, 600-604 (2006).

<sup>74</sup> 20 J. Env’tl. L. & Litig. 9, 27

<sup>75</sup> See generally, *The State of the Environment in Asia: 1999/2000* 41 (Japan Environmental Council, ed., Rick Davis, trans., 2000). In Africa, civil society participation has been difficult to achieve. Peter G. Veit and Deanna M. Wolfire, *Participatory Policy-making and the Role of Local Non-governmental Organizations*, in *Africa’s Valuable Assets* 155, 156 (Peter Veit, ed. 1998); Allan Hoben, Pauline Peters, and Dianne Rocheleau, *Participation, Civil Society, and Foreign Assistance to Africa*, in *Africa’s Valuable Assets* 109, 118 (Peter Veit, ed. 1998).

<sup>76</sup> Philippe Sands, *Turtles and Torturers: The Transformation of International Law*, N.Y.U. J. INT’L L. & POLITICS 527, 529 (2001).

<sup>77</sup> Fiona Harvey and Jonathan Brichall, *Wal-Mart to Ask its Suppliers to Report Greenhouse Gas Output*, *Financial Times*, Sept. 24, 2007, p. A1.

<sup>78</sup> See, e.g., *S.P. Gupta v. Union of India*, 1982 A.I.R. (S.C.) 149 (1982); *M.C. Mehta v. Union of India* (Shriram Gas Leak Case), AIR 1987 SC 965; AIR 1987 SC 982; AIR 1987 SC 1086; *M.C. Mehta v. Union of India* (Kanpur Tanneries), AIR 1988 SC 1037; *M.C. Mehta v. Union of India* (Municipalities), AIR 1988 SC 1115; *M.C. Mehta v. Union of India* (Calcutta Tanneries), 1997 (2) SCC 411; *M.C. Mehta v. Kamal Nath*, 1997 1 S.C.C. 388; *M.C. Mehta v. Union of India* (Taj Trapezium Case), AIR 1997 SC 734.

natural gas (CNG) vehicles,<sup>79</sup> though a subsequent study claimed that despite the mandate, soaring vehicle ownership caused air quality to deteriorate in the next two years.<sup>80</sup>

Perhaps inspired by the activism of the Indian Court, the Supreme Court of Argentina in 2006 ordered the federal, provincial and municipal governments in Buenos Aires to develop a plan to clean up the heavily polluted Riachuelo-Matanza River.<sup>81</sup> Millions of people live in the Riachuelo-Matanza watershed and the river is heavily polluted with industrial wastes from factories and leather processing facilities and open sewers. As a result of the Court's decision, the governments have established a commission with representatives of the three jurisdictions that will spend \$1.8 billion over the next 15 years to clean up the area. The number of environmental inspectors will be increased from 3 to 250 and particular emphasis will be placed on improving conditions affecting the area's 4.2 million poor, many of whom have no access to potable water or sewers. In an interview after the case was decided, Chief Justice Lorenzetti, the author of the decision, argued that "the function of the Court is to make noise."<sup>82</sup> He noted that the Court had ruled against polluters of the river as far back as 1887 and that an amendment to the Argentina Constitution in 1994 now provided the public with a right to a healthy environment.<sup>83</sup> Thus, even in countries with very different legal traditions like India and Argentina, the judiciary has used constitutional provisions relating to the environment to intervene when the other branches of government failed to respond adequately to severe pollution problems.

### 3. Integration & Harmonization: Global Responses to Climate Change

Two additional pathways that are contributing to the emergence of global environmental law are harmonization and integration. As Richard Stewart explains, there has been a

vast increase in transnational regulation to address the consequences of global interdependency in such fields as . . . environmental protection . . . These consequences can no longer be effectively managed by separate national

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<sup>79</sup> S.C. Writ Pet. (Civil), *M.C. Mehta v. Union of India* (July 28, 1998) (No. 13029/1985), available at <http://www.elaw.org/resources/text.asp?ID=1051>. See also Armin Rosencranz and Michael Jackson, *The Delhi Pollution Case: The Supreme Court Of India And The Limits Of Judicial Power*, 28 Colum. J. Envtl. L. 223 (2003).

<sup>80</sup> Amelia Gentleman, *New Delhi Air Quality Is Worsening, Group Says*, N.Y. Times, Nov. 6, 2007.

<sup>81</sup> *Mendoza v. National State*, Case No. M. 1569.XL (2006).

<sup>82</sup> Mario Wainfeld & Irina Hauser, "La funcion de la Corte es poner ruido", *El Pais*, June 25, 2006 (available online at: <http://www.pagina12.com.ar/diario/elpais/1-69025-2006-06-25.html>).

<sup>83</sup> Art. 41, Constitution of Argentina (1994) ("All inhabitants are entitled to the right to a healthy and balanced environment fit for human development in order that productive activities shall meet present needs without endangering those of future generations; and shall have the duty to preserve it. As a first priority, environmental damage shall bring about the obligation to repair it according to law. The authorities shall provide for the protection of this right, the rational use of natural resources, the preservation of the natural and cultural heritage and of the biological diversity, and shall also provide for environmental information and education. The Federal Government shall regulate the minimum protection standard, and the provinces those necessary to reinforce them, without altering their local jurisdictions.").

regulatory and administrative measures. In response, many different systems of transnational regulation or regulatory cooperation have been established by states, international organization, domestic administrative officials, and multinational businesses and NGOs, producing a wide variety of global regulatory regimes.<sup>84</sup>

One of the most important regimes that has emerged is the climate change treaty system. It is made up of two primary treaties, the United Nations Framework Convention on Climate Change<sup>85</sup> and the 1997 Kyoto Protocol.<sup>86</sup> With the provisions of the 1997 Kyoto Protocol, the treaties have given rise to a tremendous amount of administrative regulation that implement the Kyoto Protocol's emission trading system, Clean Development Mechanism, Joint Implementation Mechanism, Non-compliance Mechanism, and Financial mechanism. Among the most far-reaching institutions are the emission trading system, designed to facilitate compliance with Annex B emission limitation obligations, and the Clean Development Mechanism, intended to stimulate developing country participation in efforts to curb global greenhouse gas emissions. Both have extended the reach of what would otherwise be focused on governmental activities into sets of private and business behaviors that were traditionally under the sole control of national regulatory authorities.

Under the Kyoto Protocol, Annex B requires 39 of the most developed countries and the European Union to reduce their greenhouse gas emissions by an average of 5.2% from 1990 levels during the 2008-2012 commitment period.<sup>87</sup> Individual reduction commitments vary, with some countries even allowed increases in emissions. The European Union nations agreed to a joint 8% emission cut.<sup>88</sup> The 7% emission reduction originally negotiated by the United States was publicly repudiated in 2001 by the Bush Administration. The rationale was economic impact concerns and the failure of the developing world to take on binding emission limits in Kyoto. Participation by developing countries has remained an important issue that has most recently been taken up again as part of the Bali Action Plan to negotiate a post-Kyoto, post-2012 agreement to continue international efforts to curb greenhouse gases.<sup>89</sup>

To facilitate compliance with the Annex B reduction goals, the Kyoto Protocol included several market-based flexibility mechanisms to make compliance easier and cheaper. These mechanisms, especially Kyoto's article 17 emission trading provision, have contributed significantly to integration.

Emission trading under article 17 was modeled after the U.S. Clean Air Act's sulfur dioxide trading program. It is intended to allow emission credits gained through emission reduction efforts in one country to be sold and used toward the emissions reduction obligation by another country.

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<sup>84</sup> Richard Stewart, *The Global Regulatory Challenge to U.S. Administrative Law*, 37 N.Y.U. J. Int'l L. & Pol. 695, 699 (2005).

<sup>85</sup> 31 I.L.M. 849 (entered into force 21 March 1994).

<sup>86</sup> 37 I.L.M. 22 (entered into force 16 February 2005).

<sup>87</sup> Clare Breidenich, Daniel Magraw, Anne Rowley, James W. Rubin, *The Kyoto Protocol to the United Nations Framework Convention on Climate Change*, 92 Am. J. Int. L. 315, 320 (1998).

<sup>88</sup> Kyoto Protocol, Annex B.

<sup>89</sup> Bali Action Plan, Decision1/CP.13, FCCC/CP/2007/6/Add.1, available at <http://unfccc.int/resource/docs/2007/cop13/eng/06a01.pdf#page=3>.

Article 17's provisions, strictly speaking, address themselves only to the emission allowance trading that occurs on a government-to-government basis. However, the practical reality of making such a system work requires careful monitoring of how emission allowances are generated, traded, and used, so that emission credits can be matched up with actual use of allowances in other countries. The result has been an administrative system that is involved in supervising and monitoring the activities of private entities and businesses. Because emission allowances can be traded by private entities not only within individual Annex B nations but also among them, the Kyoto Protocol's international transactions log coordinates with national greenhouse gas registries and the European Union Community Independent Transaction Log as well as the Clean Development Mechanism. The result has been to link the business and regulatory decisions within individual nations to Kyoto Protocol requirements and to the regulatory schemes of other nations. The Kyoto Protocol's international transaction log has thus facilitated international and transnational regulation by promoting the integration of emission trading regulatory schemes worldwide.

Likewise, and equally palpable, have been the requirements of the Clean Development Mechanism (CDM).<sup>90</sup> The project-specific focus of the CDM and the supervision of project development activities by the CDM Executive Board have extended CDM influence deeply into non-Annex B project host countries.<sup>91</sup> Recognition, and thus validity, of CDM credits hinges on project compliance with requirements set out by the CDM Executive Board. As a result, the design of CDM projects within the developing world is greatly shaped by the actions of an international administrative body, arguably even more so than the regulatory requirements of any individual host country. National regulatory systems are thus being driven to conform their regulatory standards and requirements with international standards.

State sovereignty has traditionally interposed itself between much private activity and the reach of international law. However, the Kyoto Protocol's CDM provision and regulatory implementation have altered that dynamic by reaching deeply into economic and business activities within individual nations. Thus, national and regional implementation schemes of the Kyoto Protocol, especially the European emission trading system, have become closely integrated with each other and with the requirements of the Kyoto Protocol.

The climate change regime has been the most visible driver of regulatory integration. However, there are also other multilateral environmental agreements that have been successful in promoting harmonization and coordination of environmental norms among nations and enhancing the integration of national regulatory norms into transnational regimes.. For example, within the context of MARPOL 76/78<sup>92</sup> and other treaties related to the oceans, the International Maritime Organization (IMO) has taken on a significant leadership role in coordinating national marine pollution standards and other

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<sup>90</sup> Kyoto Protocol, art. 12.

<sup>91</sup> See generally Modalities and Procedures for the CDM: Role of the Executive Board, Decision 17/CP. 7, available at [http://unfccc.int/essential\\_background/convention/convention\\_bodies/constituted\\_bodies/items/2790.php](http://unfccc.int/essential_background/convention/convention_bodies/constituted_bodies/items/2790.php).

<sup>92</sup> International Convention for the Prevention of Pollution from Ships, Nov. 2, 1973, 12 I.L.M. 1319 (entered into force Oct. 2, 1983).

marine environmental protection efforts around the world.<sup>93</sup> In addition to addressing “accidental and operational oil pollution as well as pollution by chemicals, goods in packaged form, sewage, garbage and air pollution” covered by MARPOL, it administers the Oil Pollution Convention,<sup>94</sup> the London Dumping Convention (LDC),<sup>95</sup> and sponsors the Marine Environmental Protection Committee to address technical issues related to marine pollution. It provides both technical as well as policy leadership. Similarly, the Montreal Protocol regime was successful in linking and coordinating international goals for the gradual worldwide phase-out of ozone depleting substances production and consumption with individual national regulatory efforts.<sup>96</sup>

Richard Stewart has identified two additional types of regulatory systems that contribute to harmonization of different systems.<sup>97</sup> First, there are transnational regulatory networks that arise through the efforts by national officials to coordinate their regulatory and enforcement policies. The second set consists of mutual recognition agreements that represent determinations by regulators in one country to recognize products or services certified by another country as equivalent to or compatible with their own regulatory standards.<sup>98</sup>

Private initiatives, such as the the International Standards Organization (ISO) have also contributed to facilitating corporate behavior changes.<sup>99</sup> Among the most significant has been the ISO’s environmental management systems work with corporations under ISO 14000. Launched in September 1996, this initiative was undertaken by a global non-governmental organization with representatives from 157 countries. Its objective is to develop international “metastandards” through an expert consensus-building process.<sup>100</sup> ISO has sought to encourage companies to adopt standardized environmental management processes, including ISO 14001, which provides for environmental management systems certified by independent, third-party audits. In addition to developing standards and models that have become accepted as environmentally responsible best practices, ISO also has been certifying businesses that satisfy those requirements.

Adoption of ISO standards has encouraged convergence in corporate behavior worldwide. ISO standards and certification are reinforcing the idea within multinational corporations (MNCs) that use of uniform operating standards and practices with respect

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<sup>93</sup> See “Marine Environment,” available at <http://www.imo.org>.

<sup>94</sup> International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC).

<sup>95</sup> Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (1996).

<sup>96</sup> Montreal Protocol on Substances that Deplete the Ozone, 26 I.L.M. 1541 (1987). See generally Richard Elliot Benedick, *Ozone Diplomacy: New Directions in Safeguarding the Planet* (1998).

<sup>97</sup> Richard B. Stewart, U.S. Administrative Law: A Model for Global Administrative Law? 68 Law & Cont. Probs. 7 (2005).

<sup>98</sup> *Id.* At 65-66.

<sup>99</sup> The growing need for domestic regulatory agencies to harmonize disparate systems of regulation applicable to multinational corporations can also be seen in the securities regulation context. The U.S. Securities and Exchange Commission has been involved in intensive contacts with foreign regulators to determine whether to allow multinational corporations to file financial statements in accordance with the international financial reporting standards (IFRS) used since 2005 by the EU and now recognized in more than 100 countries.

<sup>100</sup> Naomi Roht-Arriaza, *Shifting the Point of Regulation: The International Organization for Standardization and Global Lawmaking on Trade and the Environment*, 22 Ecology L.Q. 479, 489-490 (1995).

to pollution, worker safety, and other matters may ultimately be cheaper and more efficient than the maintenance of multiple standards or practices, even when applicable regulatory standards vary across the countries in which the MNC operates in. Adoption of uniform internal operating practices and standards as well as the voluntary adoption of privately promulgated international standards, such as by ISO, have all driven convergence of corporate behavior and correspondingly the expectations and norms of the public and government officials.<sup>101</sup>

## II. Why is Global Environmental Law Emerging?

Remarkably, global environmental law has emerged out of a diverse set of legal systems and cultures. We can point chiefly to four trends that lie at its root: 1) globalization, 2) the growth of international environmental law, 3) economic development and law reform in many nations, and 4) fundamental ecological and public health necessities.

### A. Globalization

Trade liberalization, the World Trade Organization, and the growing influence of large multinational corporations have popularly been viewed as primary purveyors of globalization. Their dramatic growth and increasing influence on the global economy has facilitated the growth of global markets and the integration of national economies. Increased global competitive pressures on businesses have benefited consumers worldwide through lower prices and have helped many poor countries develop their economies. However, anti-globalization activists have also pointed out the negative labor and social consequences, such as job losses in industrialized nations and serious social dislocation. Ultimately, anti-globalization activists argue, free trade and the global movement of industrial activities have promoted social injustice and contributed to the exploitation of workers and the poor in the developing world.

The environmental critique is equally harsh. Trade liberalization and the growth of multinational corporations have not only improved the efficiency of world markets but also facilitated externalization of pollution and environmental degradation.<sup>102</sup> Relocating manufacturing activities to other countries has enabled businesses to take advantage of legitimate competitive advantages, such as closer proximity to raw materials or more skilled labor, as well as to exploit weak environmental standards, ineffective and corrupt regulatory systems, and desperate people who have few other options. When environmental standards are low or their implementation and enforcement weak,

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<sup>101</sup> The growing acceptance of public/private partnerships is reflected in the immediate response of U.S. companies to the discovery that many imported products contained dangerous substances, such as lead-based paint. Fearful of tightened government regulation, these companies proposed the creation of a public-private system to monitor imported food and products that should require testing and inspections of foreign suppliers. Jane Zhang, *Food Makers Get Appetite for Regulation*, WSJ, Sept. 17, 2007. The ultimate objective of these efforts is not complete harmonization of global environmental law. Rather, it is the development of a transparent system that can easily be navigated by lawyers steeped in diverse regulatory traditions.

<sup>102</sup> See generally Carmen Gonzalez, *Beyond Eco-Imperialism: An Environmental Justice Critique Of Free Trade*, 78 Denv. U. L. Rev. 979 (2001).

consumers of globally traded products can externalize the environmental costs of production. In other words, global trade allows consumers in one part of the world to enjoy the benefits of goods produced elsewhere without bearing the associated negative consequences of pollution. Globalization arguably has thus facilitated the spread of environmental ills.

Trade liberalization and outsourcing of manufacturing activity also has obscured responsibility for global greenhouse gas emissions. The rise of China as the workshop for the rest of the world has allowed industrialized societies to transfer portions of greenhouse gas emissions associated with their consumption patterns to the developing world.<sup>103</sup> For example, it has been estimated that 14% of China's 2003 greenhouse gas emissions were attributable to the manufacture of goods destined for the U.S.<sup>104</sup> Overall, exports are thought to account for 23% of China's total carbon dioxide emissions.<sup>105</sup>

There is, however, also a more positive side to globalization. Even though trade liberalization is widely viewed as a threat to the adoption of stringent domestic environmental controls,<sup>106</sup> careful studies have indicated that globalization actually may have positive environmental effects because "global ties increase self-regulation pressures on firms in low-regulation countries."<sup>107</sup> Survey data from firms in China finds that "multinational ownership, multinational customers, and exports to developed countries increase self-regulation of environmental performance." This is a partial product of the fact that many multinationals adhere to standards in the developing world that reflect what they are required to do in the developed world.<sup>108</sup> Thus, "increased trade linkages between China and developed countries contribute to environmental self-regulation of Chinese industry."<sup>109</sup>

There arguably have also been salutary effects with respect to legislative reform efforts. During the negotiations of the North American Free Trade Agreement, concerns

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<sup>103</sup> For a general discussion of the negative labor, health and safety, and environmental consequences associated with shifting manufacturing activity to China, see Alexandra Harney, *THE CHINA PRICE* (2008).

<sup>104</sup> National Center for Atmospheric Research. "Trade Imbalance Shifts US Carbon Emissions To China, Boosts Global Total." *ScienceDaily* 1 December 2005. 27 April 2008 <<http://www.sciencedaily.com/releases/2005/12/051201223809.htm>>. Thus, U.S. 2003 GHG emissions would have been 6% higher if goods imported from China had been manufactured domestically. See also Shui Bin & Robert Hariss, *Talking Carbon: Implications of U.S.-China Trade*, in *CLIMATE, EQUITY AND GLOBAL TRADE: SELECTED ISSUE BRIEFS NO. 2. ICTSD TRADE AND SUSTAINABLE ENERGY SERIES*, at 6, International Centre for Trade and Sustainable Development, Geneva, Switzerland (2007).

<sup>105</sup> Report Says West is "Carbon-Laundering," *S. China Morning Post* (Oct. 20, 2007); Tao Wang and Jim Watson, "Who Owns China's Carbon Emissions?," Tyndall Briefing Note No. 23, Tyndall Centre for Climate Change 4 (October 2007), available at [http://tyndall.webapp1.uea.ac.uk/publications/briefing\\_notes/bn23.pdf](http://tyndall.webapp1.uea.ac.uk/publications/briefing_notes/bn23.pdf).

<sup>106</sup> David A. Wirth, *Globalization and the Environment: Why all the fuss?*, Research Paper 121, Feb. 13, 2007 (Boston College Law School Legal Studies Research Paper Series).

<sup>107</sup> Petra Christmann and Glen Taylor, *Globalization and the Environment: Determinants of Firm Self-Regulation in China*, *J. Int'l Business Studies* (2001).

<sup>108</sup> It is oftentimes not clear whether such corporate policies are the result of an improved corporate sense of good citizenship and responsibility to society. They may simply be "good business" because they contribute to a better bottom-line or can blunt negative publicity and help keep regulators at bay.

<sup>109</sup> *Id.* Trade officials have expressed some concern that the proliferation of private agreements on green product standards between consumer groups and Western companies ultimately may harm developing countries, as WTO Director General Pascal Lamy recently has opined. Raphael Minder, *Trade Dispute Warning over 'Green' Product Standards*, *Sept. 23, 2007*.



about potential competitive downward pressures on environmental standards in the United States resulted in Mexico enacting significant reforms of its environmental regulatory system, including the creation of a special attorney general for the environment, PROFEPA.<sup>110</sup> Such concerns also led the NAFTA parties to negotiate and adopt an environmental side agreement, the North American Agreement on Environmental Cooperation.<sup>111</sup> Similar concerns in post-NAFTA trade liberalization negotiations with other nations, ranging from Jordan to Peru, has led the United States to press for adoption of environmental provisions within those agreements themselves.<sup>112</sup> In other words, trade liberalization can also be used as a tool to spur greater environmental protection.

Of course, globalization has been important in other ways. Apart from trade liberalization and economic integration, it has contributed to the global spread of information, ideas, culture, values, and people across national borders. As global “interconnectedness” intensifies, “capital, people, commodities, images, and ideologies move across distance and physical boundaries with increased speed and frequency.”<sup>113</sup> For example, Hollywood studios have not only spread Western, and especially American movies, music, and sports, across the world but also attitudes and values about the environment.<sup>114</sup> The rapid growth of the internet across the world has increased access to a wealth of information to the public and made communities better informed. It arguably has even fostered democratic engagement by allowing individuals to share views and opinions, including dissent from the main-stream media or official government views.

As an important catalyst for the spread of concern and understanding of the environment across the world, globalization has positively influenced the public’s perceptions, popular norms, and governmental views of how environmental issues should be properly addressed.<sup>115</sup> For example, virtually every country that has substantially

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<sup>110</sup> Also, as part of increased transparency conditions for China’s entry of into the WTO, China translated its environmental laws into English in 2003.

<sup>111</sup> North American Agreement on Environmental Cooperation, Sept. 14, 1993, 32 I.L.M. 1480 [hereinafter NAAEC]. The agreement entered into force Jan. 1, 1994. Id. at 1495.

<sup>112</sup> See, e.g., United States – Peru Free Trade Agreement, Chapter Eighteen: Environment. See generally [http://www.ustr.gov/Trade\\_Agreements/Bilateral/Section\\_Index.html](http://www.ustr.gov/Trade_Agreements/Bilateral/Section_Index.html)

<sup>113</sup> Berman, *supra* note 27 at 552. “[T]he destruction of distance is the difference that makes all the difference...[and] is the single most important catalyst for deciding the global vision children today will be living under tomorrow.” Nazer, Hisham M., POWER OF A THIRD KIND: THE WESTERN ATTEMPT TO COLONIZE THE GLOBAL VILLAGE 7 (1999).

<sup>114</sup> For example, the documentary “An Inconvenient Truth,” starring former Vice President and environmentalist Al Gore, won an academy award for best documentary in 2007 and is generally thought to have significantly enhanced the knowledge of many about global climate change.

<sup>115</sup> Globalization has given rise to what Dean Anne-Marie Slaughter of the Woodrow Wilson School of Public and International Affairs at Princeton University has described as a “globalization paradox.” While people increasingly need global institutions to respond to problems that are collective in dimension and can only be addressed on a global scale, they also fear centralization of power and any notion of global government modeled on the existing ideal of a sovereign state. Anne-Marie Slaughter, A New World Order 8 (2004). As a result, despite the seemingly inexorable advance of globalization, it is not laying the foundation for any future world government. Instead, it is fostering the development of “government networks,” relatively loose, cross-border, cooperative efforts that are becoming the core of a new order of world governance. Id. at 14. Slaughter argues that a “new sovereignty” is emerging centered around “the capacity to participate in international institutions of all types – in collective efforts to steer the international system and address global and regional problems together with their national and supranational counterparts.” Id. at 267.

revised its constitution in recent years has added an environmental provision. According to a recent count by James May, about 130 countries now have constitutions with environmental provisions, many having adopted them over just the past few decades.<sup>116</sup>

The tools created by globalization also have enabled environmentalists to build international networks.<sup>117</sup> They and their supporters in government agencies have become better able to assist and nurture each other and change prevailing understanding and attitudes about the environment and pollution. Networks of government officials such as the International Network for Environmental Compliance and Enforcement (INECE) and Parliamentarians for Global Action, a network of 1300 legislators from 114 countries, have been crucial in speeding up establishment and improving implementation of environmental laws while providing environmental government officials in nations all over the world with mutual support.<sup>118</sup> Among environmental academics, the creation of a global environmental law scholars network through the activities of the IUCN Academy of Environmental Law has been able to bring together hundreds of environmental law scholars from all over the world, facilitating the development of global environmental law.<sup>119</sup>

Finally, changing global perceptions are arguably at the root of behavioral changes by multinational corporations. Multinational corporations now realize that their activities anywhere in the world can become a focus of global protests by environmental and human rights activists. This has put pressure on multinational corporations to improve their behavior. Even when legal standards diverge sharply between countries, multinational corporations find it harder to justify the use of less protective practices in the developing world, especially when placed under the spotlight of the international media by NGOs raising environmental justice concerns. In one highly successful publicity campaign about sweatshop clothing factories in the developing world, NGOs were able to shame American high-end clothing retail companies into requiring their suppliers in developing countries to provide workers with better working conditions and wages.<sup>120</sup> Thus, globalization has not only extended the reach of businesses and economies around the world, but also that of environmentalists and their ideas.

## B. The Growth of International Environmental Law

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<sup>116</sup> James R. May, *Constituting Fundamental Environmental Rights Worldwide*, 23 PACE ENVTL. L. REV. 113, 129 (2005-06).

<sup>117</sup> One example of this is the Climate Action Network (CAN). See Asher Alkoby, *Global Networks and International Environmental Lawmaking: A Discourse Approach*, 8 Chi. J. Int'l L. 377, 389-390 (2008).

<sup>118</sup> See <http://www.inece.org>. The global judiciary also is involved in informal cooperative networks, Anne-Marie Slaughter, *Judicial Globalization*, 40 VA. J. INT'L L. 1103 (2000), though not without criticism. See John O. McGinnis & Mark L. Movsesian, *Against Global Governance in the WTO*, 45 HARV. INTL. L. J. 353 (2004) (arguing that global regulatory "deals" could serve as vehicles for interest group transfers).

<sup>119</sup> See <http://www.iucnael.org>. The Academy's most recent colloquium was held in Rio and Paraty, Brazil in May and June 2007; the next academy meeting will take place in Mexico City in November 2008. A similar effort has occurred through efforts by the University of Maryland School of Law with respect to environmental law clinics across the world, designed to give students practical experience in the field. See [www.globalenvironmentallaw.com](http://www.globalenvironmentallaw.com)

<sup>120</sup> The National Labor Committee, *Mission Statement*, <http://www.nlcnet.org/aboutus.php>.

Another factor contributing to the emergence of global environmental law has been the growth and spread of international environmental law, binding and non-binding norms as well as international institutions. Between 1970 and 2000 the number of international treaties addressing environmental concerns more than quadrupled from 52 to 215.<sup>121</sup> Among the most prominent are the UN Framework Convention on Climate Change and its 1997 Kyoto Protocol, the Convention on Biological Diversity, the Basel Convention on the Transboundary Movement of Hazardous Wastes, the Rotterdam Convention on Prior Informed Consent, and the International Tropical Timber Agreement. Such environmental agreements have contributed to the global acceptance and spread of international environmental legal norms, entrenching environmental norms as aspirational and frequently legally binding.

The process of creating implementing legislation for these treaties has helped embed globally agreed upon values and principles in member states' national regulatory systems.<sup>122</sup> Thus, participation in multilateral environmental agreements has facilitated informal, cross-border collaboration between government officials, who learn from each other's experience and share technical expertise, and furthered the legal process of internalizing environmental norms into national legal systems.

Parallel growth of non-binding environmental commitments, declarations, and other international instruments has had similar effects. Non-binding norms and instruments have helped to reinforce worldwide recognition of environmental values and on occasion assisted in the crystallization of binding legal norms. For example, the most widely accepted environmental norm of customary international law, the transboundary harm principle, is commonly associated with Principle 21 of the non-binding Stockholm Declaration on the Human Environment.<sup>123</sup> Principle 21 traces its historical origins to the Trail Smelter Arbitration<sup>124</sup> and other non-environmental international legal norms. However, it is widely accepted that worldwide concern, as expressed through non-binding declarations and other international instruments, has contributed significantly to the general acceptance of Principle 21 as customary international law.

The emergence and growth of international institutions has similarly supported the growth of international environmental law. Among the most important ones has been the United Nations Environment Programme, created in 1972 in the wake of the Stockholm Conference on the Human Environment.<sup>125</sup> However, treaty secretariats and technical expert entities established by various multilateral environmental agreements have had significant influence also. Their primary function may be as administrative support bodies. Their daily work of providing substantive research, policy development,

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<sup>121</sup> [cite]

<sup>122</sup> See Harold Hongju Koh, *Transnational Legal Process*, 75 NEB. L. REV. 181 (1996) (Arguing that once nations begin to interact, a complex process occurs, whereby international legal norms seep into, are internalized, and become embedded in domestic legal and political processes).

<sup>123</sup> Declaration of the United Nations Conference on the Human Environment, adopted June 16, 1972, U.N. Doc. A/CONF.48/14, reprinted in 11 I.L.M. 1416 (1972).

<sup>124</sup> Trail Smelter Case (U.S. v. Can.), 3 Rep. Int'l Arb. Awards 1905 (1941); see also John Read, *The Trail Smelter Dispute*, 1 CAN. Y.B. INT'L L. 213, 213-17 (1963).

<sup>125</sup> Another organization significant to the development of environmental law has been the World Conservation Union (IUCN) and its Environmental Law Commission. In more recent decades, the Intergovernmental Panel on Climate Change has taken an important leadership role in advancing public awareness about global warming, prompting the adoption of the United Nations Framework Convention on Climate Change in 1992.

and coordination functions with other institutions usually relies on and incorporates existing and emerging environmental legal norms. Such practices facilitate the legal process by which environmental norms become both entrenched in international legal discourse as well as internalized in the actions of national and international actors.

International organizations that have traditionally had a primarily non-environmental focus, such as the International Maritime Organization, the World Bank, and many United Nations specialized agencies such as the Food and Agriculture Organization, the United Nations Development Program, and the World Meteorological Organization, have increasingly adopted environmental protection as a set of serious concerns relevant to their organizational mission. Even the World Trade Organization, traditionally viewed by environmentalists as the organization most indifferent, sometimes even hostile, to environmental concerns, has arguably become much more solicitous of the environment.<sup>126</sup>

Of course, an important weakness in the evolution of international environmental legal norms remains the difficulty of enforcing such norms.<sup>127</sup> The most recent and most visible sign of progress in this regard has been the Kyoto Protocol's Non-compliance mechanism.<sup>128</sup> Greater levels of enforcement and compliance with such international environmental law norms clearly facilitate the development and growth of global environmental law.

Contrary to the spirit of multilateralism, but similar in its effect in spreading environmental norms, have been efforts by some nations to affect environmental behavior through unilateral measures, chiefly the extraterritorial application of laws. Such unilateral efforts are frequently disruptive and create significant diplomatic tensions. For example, there can be little doubt that environmental unilateralism by the U.S., for example in the context of efforts to protect marine species,<sup>129</sup> has led to significant amounts of international resentment and concern. Yet, linking access to markets or other economic opportunities to environmental protection creates strong incentives for behavioral change and compliance with emerging environmental norms and legal principles that might otherwise be ignored. Such approaches have given the environmental movement significant clout in advocating for more serious commitments to environmental protection by international organizations and foreign governments.

Arguably less objectionable have been instances when countries such as the United States have sought to facilitate the enforcement process of international environmental norms through litigation in their own courts rather than apply distinctly

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<sup>126</sup> See, e.g., John H. Knox, *The Judicial Resolution of Conflicts Between Trade and the Environment*, 28 HARV. ENV. L. REV. 1 (2004).

<sup>127</sup> See generally Tseming Yang, *International Treaty Enforcement as a Public Good*, 27 MICH. J. INT'L L. 1131 (2007).

<sup>128</sup> Kyoto Protocol art. 18; Procedures and Mechanisms Relating to Compliance under the Kyoto Protocol, Decision 24/CP.7, U.N. Doc. FCCC/CP/2001/13/Add.3 (Nov. 10, 2001). Two additional means of addressing noncompliance are the multilateral consultative process of the Framework Convention and the dispute settlement provisions. Kyoto Protocol, *supra* note 227, arts. 16, 18. These two processes are to operate unaffected by the noncompliance process. Decision 24/CP.7 § XVI. See generally Yang, *International Treaty Enforcement as a Public Good*, *supra* note \_\_\_, at 27, MICH. J. INT'L L. 1131, 1176-79.

<sup>129</sup> United States--GATT Dispute Panel Report on Restrictions on Imports of Tuna, Sept. 3, 1991, GATT B.I.S.D. (39th Supp.) at 155 (1993); [Shrimp-Turtle]

national substantive norms. The Alien Tort Act is one example.<sup>130</sup> However, nearly all the environmental lawsuits brought under the Alien Tort Statute have failed to win judgments in court because the actions they seek to redress are not considered violations of “the law of nations.”<sup>131</sup> But by shining the glare of international publicity on the activities of multinational corporations, these lawsuits have increased pressure on companies to upgrade their environmental practices in developing countries and have given greater credence to such international environmental norms.

Ultimately, the growth of binding and non-binding international environmental legal norms and the rise of international environmental organizations promote acceptance and strengthen environmental norms both internationally and in national legal systems. Even though binding multilateral environmental agreements have had the most direct effect by making their norms part of applicable national law for treaty parties, non-binding instruments and international organizations have also been influential in facilitating the international legal process by which these norms enter into particular systems.

### C. Development, Law Reform, and Spreading the Rule of Law

The third driver of convergence has been economic development and legal reform initiatives, especially those specifically targeting the reform of environmental regulatory systems in developing nations. Countries such as the People’s Republic of China have been actively engaged in an extensive process of law reform that has included the country’s environmental law system.

Since environmental protection has become an urgent priority of the Chinese government, China has sought out legal and technical expertise from other countries to inform its efforts to improve its environmental laws. For example, to promote efforts of adaptation and transplantation of foreign laws to China, the National People’s Congress (NPC) has worked for many years to prepare “A Corpus of Foreign Environmental Laws,” a comprehensive translation into Chinese of the principal environmental laws employed by a number of other countries. In the meantime, the Chinese legal system has also incorporated a variety of regulatory policy innovations into its environmental laws. These include the use of emissions trading, effluent charges, green labeling, extended product responsibility, environmental performance grading, chemical testing and toxics reduction schemes. China has become a vital part of efforts to protect the global environment, and its environmental laws now reflect the globalization of environmental law.

Development itself has contributed significantly to such changes. As national economies grow in size and complexity, the need for environmental regulation grows. Manufacturing, heavy industry, and other sectors of developing country economies have risen relative to agricultural and subsistence activities, creating a more urgent need for complex regulatory schemes addressing pollution, chemical use, and natural resource exploitation. Rising levels of affluence and consumption have also increased the demand for environmental quality and environmental protection. Since all of these changes

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<sup>130</sup> 28 U.S.C. § 1350.

<sup>131</sup> See, e.g., *Beanal v. Freeport-McMoran, Inc.*, 197 F.3d 161 (5<sup>th</sup> Cir. 1999); *Jota v. Texaco, Inc.*, 157 F.3d 153 (2d Cir. 1998).

happen now within an economically interconnected world, the development of national environmental law and regulatory systems will be shaped by global environmental regulatory trends.

For example, Beijing adopted “Euro IV,” the most up-to-date European motor vehicle exhaust standards and currently the most advanced standard in the world, to address serious air quality issues in the run-up to the Olympics.<sup>132</sup> A corollary consequence of harmonizing applicable domestic regulatory standards with those across the world is to make China’s budding auto manufacturing industry more competitive globally. There is an additional positive effect. Increased availability of imported goods that adhere to higher international standards will raise consumer expectations about quality. The result will be to increase pressure on domestic producers to make better goods and on regulators to enhance consumer and environmental protections.<sup>133</sup> In other words, development is not only amplifying the pressures of globalization generally but also spurring the evolution of environmental values and regulatory systems.

Some of these efforts have been supported by governmental and non-governmental organizations in industrialized nations. Among the most notable American efforts is that of the American Bar Association. In the early 1990s, the ABA created the Central and Eastern European Law Initiative (CEELI) which was intended to promote law reform and the rule of law in the former communist countries and Soviet Union.<sup>134</sup> Since then, the ABA has expanded that work to other parts of the globe. The renamed Rule of Law Initiative is now engaged in work in over 40 countries. Similarly, the U.S. State Department, the U.S. Agency for International Development,<sup>135</sup> and many international organizations, including the United Nations Environment Programme, have sought to promote the rule of law and law transplantation efforts across the world. More targeted efforts, such as by the U.S. EPA, have worked specifically on environmental issues with particular countries such as China, India, and Mexico.<sup>136</sup>

#### D. Ecological and Public Health Necessities

The final set of drivers of the emergence of global environmental law have been similarities in the ecological and social regulatory conditions among different countries as well as a shared focus on protecting the ecological commons, environmental public goods and public health.<sup>137</sup> As a fundamental matter, the goals of environmental regulation are largely the same across the world – protecting human health and

<sup>132</sup> Shi Jiangtao, *Capital Sets Tougher Emission Standards*, S. China M. Post, Feb. 18, 2008.

<sup>133</sup> Simon Kuznets, *Economic Growth and Income Inequality*, 45(1) Am. Econ. Rev., 1955, 1-28.

<sup>134</sup> See <http://www.abanet.org/rol/about.shtml>; D'Alemberte, “Our Eastern European Challenge. Providing Technical Assistance to Struggling Democracies,” ABA Journal 8 (March 1992).

<sup>135</sup> See U.S. STATE DEPARTMENT AND U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT, JOINT HIGHLIGHTS OF PERFORMANCE, BUDGET, AND FINANCIAL INFORMATION, FISCAL YEAR 2007 at 17 (Feb. 2008) (“Strategic Goal 2: Governing Justly and Democratically”), available at [http://www.usaid.gov/our\\_work/democracy\\_and\\_governance/technical\\_areas/dg\\_office/rol.html](http://www.usaid.gov/our_work/democracy_and_governance/technical_areas/dg_office/rol.html); see also, U.S. AID, Office of Democracy and Governance: Rule of Law, available at [http://www.usaid.gov/our\\_work/democracy\\_and\\_governance/technical\\_areas/dg\\_office/rol.html](http://www.usaid.gov/our_work/democracy_and_governance/technical_areas/dg_office/rol.html) (visited 9/4/2008).

<sup>136</sup> See [http://www.epa.gov/oia/about/oia\\_bilateral.htm](http://www.epa.gov/oia/about/oia_bilateral.htm).

<sup>137</sup> See, e.g., Richard Lazarus, *Human Nature, the Laws of Nature, and the Nature of Environmental Law*, 24 Va. Env'tl. L. J. 231, 234-240 (2005).

environmental public goods. Since humans tend to live in similar conditions and industrialization has led societies to use resources in similar ways, pollution and other forms of environmental degradation are causing similar adverse effects and are acting through similar pathways.<sup>138</sup>

The environment's interconnectedness, the ease with which pollution crosses political and legal jurisdictions, and the effects of globalization provides further reason for commonalities. If national and international regulatory regimes must address problems that have similar characteristics, similar causal pathways, and limiting constraints, it seems inevitable that such systems would converge in design and function. In other words, shared characteristics of environmental problems ought to result in legal and regulatory solutions that also share important characteristics in their design and effect.

### III. The Impact of Global Environmental Law on the Practice and Development of Environmental Law

What are the ramifications for the emergence of global environmental law? We have not attempted to provide a comprehensive description of the field, given the limited nature of this article. Nevertheless, our description of the contours of the field suggests at least several implications related to the teaching and practice of environmental law, the design of international environmental institutions, and the evolution of national environmental regulatory systems.

#### A. The Development and Evolution of Environmental Law Globally

Globalization of environmental law means that environmental protection approaches, legal principles, and regulatory institutions will be similar or have analogues in many different national and international systems. For practitioners and scholars of environmental law, it implies that they share an understanding of environmental problems and relevant solutions that transcends geographic and political boundaries. Some differences will be inevitable. But knowledge gained in one system will be relevant and meaningful to the operation and effectiveness of environmental regulatory systems elsewhere.

If environmental legal doctrines, principles, and approaches have relevance and applicability to legal systems outside of the ones within which they have been created, then systems at an "earlier" stage of development might profitably use many of the lessons of more developed regulatory systems. Environmental law principles found at the national level will be useful not only for other nations but also in international treaties, creating opportunities for environmental lawyers and regulatory specialists to share knowledge and expertise outside of their own home jurisdiction.<sup>139</sup> Transferability

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<sup>138</sup> For example, problems of air pollution emission from the burning of fossil fuels or eutrophication of lakes and other water bodies due to sewage discharges or fertilizer run-off share fundamental similarities with respect to causes and effect virtually everywhere.

<sup>139</sup> Opportunities for environmental law experts and regulatory specialists would seem to increase with the growth of global environmental law.

and applicability are the very premise of law “transplantation,” of course. However, the nature of global environmental law lends enhanced legitimacy to such processes.

Possibly the most practical consequence is the prospect of greatly increased opportunities for environmental lawyers to supply multi-jurisdictional legal services. Though some international law firms are already engaged in international, multijurisdictional practice, the emergence of global environmental law will accelerate and broaden such opportunities.

Global environmental law suggests an additional conclusion. Humanity’s shared interest in the global environmental commons makes the creation and development of environmental law a communal endeavor. Its collective nature necessitates that environmental regulation not remain the responsibility, or sovereign prerogative, of individual national legal systems or the specialized province of international lawyers and diplomats. Instead, it is an enterprise in which environmental law practitioners, scholars, activists, regulators, and legislators worldwide share an interest.

For environmentalists, the idea that the environment and pollution do not respect political boundaries may be self-evident. Comparative law scholars, however, have long maintained that law transplantation must be considered in the context of a system’s specific legal history, culture, and social mores. In other words, even if law transplantation is a common phenomenon, and legal systems appear to share common elements, comparative law scholar Alan Watson has denied that “one can set up a theory of general legal development applicable to all or many unrelated societies.”<sup>140</sup> Contrary efforts are bound to be “superficial,” simply “wrong,” and “scarcely systematic.”<sup>141</sup> The endeavor of global environmental law hardly seeks to set out a “theory of general legal development.” However, it does break with Watson’s premise that legal systems and cultures cannot share fundamental similarities, at least in the field of law that regulates and addresses human interactions with parts of a common external world.

## B. Teaching & Conceptualizing Environmental Law

For those of us who teach environmental law, the emergence of global environmental law should change the way we teach the subject to future generations of lawyers and policymakers as well as our scholarly understanding of it. At the most basic level, we need to expose newcomers not only to domestic law, but also to the principal approaches to environmental regulation that are emerging around the world.

Global environmental law confirms how many environmentalists think of their field as its own discipline, a distinct set of problems that require specially-tailored rather than generic legal tools for solutions. In the U.S., environmental law is already considered distinct from administrative law, property law, or tort law. It is not just concerned with processes for constraining the exercise of government power and bureaucratic discretion in the environmental context, protection of private possession, or protection against personal injury. It also encompasses a comprehensive set of substantive principles unique to environmental regulation and the interaction and relationship of humans with the natural world.

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<sup>140</sup> Alan Watson, *Legal Transplants: An Approach to Comparative Law* 13 (2d ed. 1993).

<sup>141</sup> *Id.* at 10-11.



That distinctiveness has yet to be fully recognized in international environmental law, which has traditionally been thought of as a mere application of public international law principles to the global environment.<sup>142</sup> Like its domestic analogue, however, and alluded to in Section I above, international environmental law has its own unique substantive concerns and principles that go beyond structuring relations between sovereign nations.

Global environmental law clarifies the complementary relationship between international, national, and comparative environmental law. National schemes are the implementing systems of international regimes and vice versa. . International regimes are international coordinating extensions of nationally scoped regulatory systems. Given the global and international scope of most environmental problems, neither can any longer be truly effective without the other. Hence, to teach one without significant reference or discussion of the other would seem to provide a seriously incomplete picture.

There is also a pedagogical point for students of international environmental law, who are persistently frustrated by international environmental law's enormous enforcement challenges. Many draw the conclusion, consistent with prevailing public perception, that international environmental law is unenforceable and therefore ineffective. While there is important scholarly discourse on this issue,<sup>143</sup> global environmental law provides a relatively simple clarification to an underlying mistaken premise: international environmental regimes are not stand-alone systems. As integral parts of a larger system that also includes national regulatory systems, enforcement, compliance and effectiveness matters must be judged on the performance of the overall whole, not just perceived deficiencies of one piece, such as international environmental laws. In other words, concern about lack of enforcement mechanisms in environmental treaties can be misplaced if the agreement is reasonably designed to rely on national systems to implement its goals.<sup>144</sup>

Finally, global environmental law is consistent with and supportive of problem-based approaches to regulation as opposed to jurisdiction-based regulation. For transnational or global environmental problems, the availability of well-recognized environmental legal principles that apply on a transnational and global basis facilitates the design of regulatory solutions. Government regulators and activists can look to global environmental law principles as generally accepted tools and building blocks for designing solutions rather than examining problems from a "first principles" perspective.

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<sup>142</sup> Alan Boyle & Patricia Birnie, *INTERNATIONAL LAW AND THE ENVIRONMENT* 1 (1992) ("some legal scholars dislike the use of the term 'international environmental law', because they consider that there is no distinct 'environmental' body of law"). The three major international environmental law books currently on the market, while excellent treatments of the subject matter, focus almost exclusively on the international components of the regimes that they discuss with little or no discussion of the domestic implementing schemes.

<sup>143</sup> For a discussion of this debate, see Tseming Yang, *International Treaty Enforcement as a Public Good: Institutional Deterrent Sanctions in International Environmental Agreements*, 27 MICH. J. INT'L L. 1131, 1134-1149 (2006).

<sup>144</sup> Of course, *blind reliance* on national environmental regulatory systems for implementation and enforcement of international environmental legal norms is inappropriate since many developing countries still lack of regulatory and enforcement capacity. The conclusions to be drawn is environmental regulatory regimes must be viewed in context, and solutions require reform of both international law as well as national regulatory systems. For a further discussion, see *infra*.

### C. Advancing International Environmental Law and Governance

Global environmental law also expands our thinking about how to advance international environmental governance. It suggests that the effort to design an effective international environmental law system requires more institution building than has traditionally been engaged in. It also opens a variety of options for improving the international system, some of which are not ordinarily considered in scholarly discourse.

Traditionally, multilateral treaty negotiations have concerned themselves primarily with the drafting of legal commitments that parties can accept and carry out. At its extreme, such agreements have largely served as “contracts” memorializing agreements about actions each party has committed to carrying out in order to achieve shared environmental goals.<sup>145</sup> However, the modern trend in environmental treaty-making has been an increase in efforts to create environmental institutions as key tools for achieving treaty objectives. Thus, multilateral agreements are not mere “contracts” between the parties but are increasingly creating regulatory regimes and multi-function institutions.

One of the most important examples of this trend has been the creation of various institutions within the Kyoto Protocol, such as the international emission trading system and the Clean Development Mechanism. Unlike treaty secretariats and other subsidiary and technical support bodies, these two entities have been endowed with much more authority than limited secretarial, technical, and ministerial functions. They carry out activities that have wide-ranging effect, engage in significant policy-making work, and enjoy a significant amount of discretionary authority.<sup>146</sup> Even though their work remains subject to the supervision of the treaty parties, their function and operation has begun to look much more like those of administrative regulatory agencies

The close relationship of global environmental law to national environmental law systems suggests that this trend will continue with efforts to strengthen the international environmental law system. In other words, the focus of international environmental law will continue to shift and broaden from negotiation and formulation of limited legal commitments by each party to greater attention to the design of institutional structures. Such institutions are likely to function more like delegated decision-makers in much the same way that administrative agencies do, with many of the same attendant benefits and concerns.<sup>147</sup>

Global environmental law also has important implications for two of the most important and persistent concerns about international environmental law -- effectiveness and enforceability. Compliance, enforcement and effectiveness of international legal norms are substantially shaped and affected by the anarchical nature of the international system.<sup>148</sup> As such, relations between nations continue to be defined more by power

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<sup>145</sup> Tseming Yang, International Treaty Enforcement, *supra* note \_\_, at 1160-62. As a non-environmental example, consider the pervading use of “contracting parties” in the 1947 General Agreement on Tariffs and Trade to refer to treaty parties. See General Agreement on Tariffs and Trade, Oct. 30, 1947, 61 Stat. A-11, T.I.A.S. 1700, 55 U.N.T.S. 194 [hereinafter GATT].

<sup>146</sup> See discussion *supra*, section I(C)(3).

<sup>147</sup> For a discussion of the concerns raised by the rise of such institutions, see Daniel Esty, *Good Governance at the Supranational Scale: Globalizing Administrative Law*, 115 YALE L. J. 1490 (2006).

<sup>148</sup> See Thomas Hobbes, *LEVIATHAN* ch. 13 (C.B. McPherson ed., Penguin Books 1981) (1651); see also Hedley Bull, *THE ANARCHICAL SOCIETY: A STUDY OF ORDER IN WORLD POLITICS* (1977).

dynamics than legal rights and obligations. With the exception of the most important and recent multilateral agreements, this dynamic is reflected in the lack of enforcement mechanisms or dispute settlement provisions in most environmental agreements.<sup>149</sup> To the extent that they do have such mechanisms, they are rarely, if ever utilized.<sup>150</sup> Noncompliance, even egregious instances, is rarely if ever punished by the international community -- or at least not through institutional mechanisms.<sup>151</sup> Thus, compared to national regulatory systems, the commitments contained in multilateral environmental agreements appear to be more aspirational than legally obligatory. Based on this state of affairs, many have concluded that among the most important measures to improve the effectiveness of international environmental regulatory regimes is the incorporation of international enforcement mechanisms.

That view seems supported when one considers the success of the international system responsible for liberalizing and promoting free trade. The World Trade Organization (WTO) and its General Agreement on Tariffs and Trade precursor have been able to transform not only the international trading system but also create a global framework governing the economic relationships between nations. Some have suggested that its strength can be traced in large part to the development of a strong enforcement mechanism that allows for the imposition of trade sanctions when legal obligations are violated.<sup>152</sup> That mechanism has been triggered on a number of occasions in the past.

As noted previously, the international environmental law system has generally lacked such strong sanctions powers.<sup>153</sup> The WTO's environmental counterpart, the United Nations Environment Programme (UNEP), which has largely served as an information clearing-house, administrative support body, and initiator of treaty negotiations, has had little substantive policy-making responsibility and very limited influence in shaping global environmental governance. When environmental interests have come into conflict with international trade norms, the environment is often perceived to have lost in the past. The resulting perception has been that the environmental regulatory system has much less clout and is much less effective than its trade counterpart.

There is no doubt that UNEP's shorter existence, about 35 years compared to the WTO/GATT system's approximately 50 years,<sup>154</sup> and greater international concern and

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<sup>149</sup> The Kyoto Protocol's non-compliance mechanism is of course one of the few exceptions.

<sup>150</sup> See, e.g., Tseming Yang, *The Effectiveness of the NAFTA Environmental Side Agreement's Citizen Submission Process: A Case Study of Metales y Derivados*, 76 U. COLO. L. REV. 443, 468-69 (2005).

<sup>151</sup> For a discussion of the challenges of enforcement and the concerns raised by non-institutional enforcement processes, see Tseming Yang, *International Environmental Treaty Enforcement*, *supra* note \_\_\_, at 1134 - 49.

<sup>152</sup> See, e.g., Brett Frischmann, *A Dynamic Institutional Theory of International Law*, 51 BUFF. L. REV. 679, 775 n.296-97.

<sup>153</sup> However, there have been exceptions, such as in the North American Agreement on Environmental Cooperation. Under part V of the agreement, a successful dispute settlement outcome may allow an aggrieved party to impose sanctions in the amount of up to 0.007 percent of total trade in goods between the Parties." NAAEC, *supra* note \_\_\_, at art. 34(5) and Annex 34. Unfortunately, since the NAAEC's adoption in 1994, these provisions have never been triggered.

<sup>154</sup> General Agreement on Tariffs and Trade, \_\_\_\_\_ (1947). Of course, the GATT was part of the Bretton Woods agreements, which sought to create a comprehensive international post-world war II economic order. In addition to the General Agreement on Tariffs and Trade, the allied nations also created the International Trade Organization, the International Monetary Fund, and the World Bank. The International

commitment to promoting economic growth over environmental protection are important reasons for UNEP's relatively marginal role in shaping the international diplomatic priorities. Yet, it seems to be an unassailable conclusion that possession of coercive sanctions powers has endowed the international trading system with a powerful tool for making it more effective as a system of governance than the set of environmental regimes.

Some scholars, Daniel Esty notably among them, have taken the institutional comparison of the international environmental regulatory system to the WTO to its logical conclusion.<sup>155</sup> Given that at least some of the GATT/WTO system's success in achieving its institutional mission of liberalizing trade relations among nations must be attributed to its institutional design, including its endowment with trade sanctions enforcement mechanism, Professor Esty proposed some time ago the creation of a Global Environmental Organization (GEO) that is similar to the WTO in design and powers.<sup>156</sup>

Among its most important functions, a GEO would provide an institutional focus around which environmental interests worldwide could converge and advance shared global environmental protection goals. Going further than UNEP, GEO would unify the functions and administration of the existing multitude of multilateral environmental agreements. Esty would also endow GEO with the power to impose trade sanctions, parallel to the WTO's enforcement mechanism.<sup>157</sup> The result would be an environmental analogue and counterweight to the power of the WTO.

Needless to say, the quest for a GEO has so far been fruitless. While UNEP is an important promoter of the development of international environmental law and facilitator of multilateral treaty negotiations, it remains little more than a general secretarial body with virtually no substantive responsibilities or powers. Despite the world's pressing environmental problems, the prospect of UNEP or any other international organization becoming Esty's GEO or, for that matter, the creation of a new organization with such powers, seems remote at this point in time. And so, the effectiveness and stature of international environmental law remains a tremendous source of frustration for environmentalists.

Putting aside the question whether a GEO or an analogous entity with powers similar to that of the WTO is the most desirable or appropriate governing institution for the global environment, it is also only one option for enhancing the effectiveness of international and global environmental governance. Lessons from the evolution of international institutions, which are becoming more like domestic administrative regulatory agencies, suggest a second option. Rather than inventing a single, entirely new governing body for the global environment, domestic administrative law teaches that regulatory systems can be effective even if administrative regulatory functions are placed in multiple specialized entities. Existing trends suggest that existing administrative regulatory bodies, including national regulatory agencies, can be recruited into such efforts.

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Trade Organization was eventually rejected by the United States and never came into existence. *See* John Jackson \_\_\_\_\_

<sup>155</sup> Daniel Esty, *Greening the GATT*, 78-82, 85-86 (1993).

<sup>156</sup> For another model of a WTO-type environmental organization, see Frank Bierman, *The Case for a World Environment Organization*, *Environment*, 28-29, Nov. 2000.

<sup>157</sup> [Cite]

In the United States, major environmental management functions are spread out across a number of specialized administrative agencies, including the Environmental Protection Agency, the Department of Interior, the Forestry Service, the Coast Guard, the National Atmospheric and Oceanic Administration, and many more. Effective management of the environment requires that particular coordinative, cooperative, and supervisory functions and outcomes be met. No one single administrative agency is assigned a regulatory monopoly over all aspects of environmental regulation. While inefficiency, duplication, and conflict remain important concerns, it is clear that environmental regulatory functions can be accomplished through a diversity of administering entities.

When such institutions already exist, whether in international or national regulatory systems, creation of appropriate linkages or appropriate expansion of institutional responsibilities can be an effective and efficient solution.<sup>158</sup> Under existing environmental treaty practice, implementation of treaty commitments is expected to come primarily through the activities of existing national environmental regulatory agencies. In effect, existing treaty practice already links national regulatory agencies to the implementation of international objectives. The converse, however, is also becoming more common. Increasingly, as the Kyoto Protocol's emission trading system and the Clean Development Mechanism indicate, international institutions are also directly influencing regulation and environmental activities at the national and sub-national level.

Greater involvement of international institutions could potentially play an important role in addressing weaknesses in the environmental regulatory systems of developing nations. Thus, international institutions could assist in the implementation of international commitments. They might even act as substitutes for regulation in many developing nations until their fledgling regulatory systems can become more robust and effective. Thus, recruitment of international standards and intervention of international institutions can help achieve regulatory goals that would traditionally be viewed solely as domestic problems. They can serve as important options for remedying limited regulatory capacity.

Countries such as the United States have traditionally resisted such efforts, primarily for reasons of national sovereignty. Their preference has been for international environmental treaties to continue delegating responsibility for implementation to national governments.<sup>159</sup> Nevertheless, some aspects of global environmental law are already bypassing the need for strict divisions between national and international governance.

The implementation of the Kyoto Protocol's Clean Development Mechanism is an illustrative example. In recent years, CDM projects in China and other countries focused on the destruction of chemical pollutants, such as HFC-23. Such projects appear to have been designed more for their financial benefits than to advance the stated policy goals of the CDM. However, because they can generate carbon credits relatively cheaply, they

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<sup>158</sup> That same is true for compliance institutions. As an alternative to creating a *sui generis* enforcement mechanism, it would be appropriate to identify the carrot and stick functions fulfilled by such mechanisms and consider whether such functions can be achieved through other institutions or mechanisms. Such disaggregation of functions would allow for us to consider second-best solutions as part of the tool-box of solutions rather than hunting for the elusive ideal enforcement mechanism.

<sup>159</sup> But given the sophistication of the U.S. system, it would be difficult to make a general argument for such assistance need to the U.S. anyway.

threaten to distort the global carbon market. Their potential to generate tremendous financial returns easily has the potential to divert valuable investment dollars from projects, such as renewable energy facilities or energy efficiency and conservation improvements, with the potential for promoting long-term sustainability with respect to greenhouse gas emissions.<sup>160</sup> The result would be to subvert the very goals that the CDM was designed to promote

National regulators, including in China, have failed to rein in such developments even though regulation of industrial development and business activity would seem to be within the traditional purview of domestic regulatory agencies. Of course, some have suggested that the CDM Executive Board is the primary entity responsible because of lax oversight of the mechanism.<sup>161</sup> But it is notable that the structure of the CDM mechanism and the oversight responsibilities of the CDM Executive Board allows an international body to address such issues. Because CDM credits are traded internationally through the Kyoto Protocol's mechanisms and must comply with various requirements set out by the CDM Executive Board for CDM credits to be recognized by the Kyoto Protocol, the Executive Board could fix much of this problem by tightening the project registration standards. In other words, the regulatory intervention of an international governing body has the potential to remedy the failings of national regulatory agencies.

#### D. Advancing National Environmental Law and Governance

Global environmental law also has implications for the study of comparative environmental law and the structure of national environmental governance systems across the world. Such understanding will be critical for professionals and international lawyers engaged in international development assistance work focusing on environmental issues. Improved understanding of comparative and foreign environmental law can also point out deficiencies and opportunities for growth of the U.S environmental law system. Finally, the lessons of global environmental law will be of assistance to environmental law development and reform efforts in developing countries such as China.

For an effective understanding of global environmental law, including its emergence out of convergence, transplantation, integration, and harmonization, we will need to gain a good understanding of what is analogous or different between systems. It requires us to look beyond superficial similarities to gain a good grasp on the principles, practice, and outcomes of different environmental governance systems and their functional components. As in other areas of comparative law study, provisions that appear to be similar might function rather differently and have little relationship to each other; conversely, seemingly disparate schemes might be functional equivalents because of their substantive effect or analogous operation.

One example is China's pollution levy systems for excess water and air pollution emissions.<sup>162</sup> It looks much like an environmental tax system, designed to account for the

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<sup>160</sup> See, e.g., Tseming Yang, *The Implementation Challenge of Mitigation China's Greenhouse Gas Emissions*, forthcoming *Geo. Int'l. Env't L. Rev.* (2008), on file with author.

<sup>161</sup> See, e.g., Jeffrey Ball, *U.N. Warming Program Draws Fire*, *WALL STR. J.*, Jul. 11, 2008, at 1.

<sup>162</sup> Environmental Protection Law of the People's Republic of China (1989), art. 28, available at <http://www.lawinfoChina.com>.

environmental externalities of pollution and appears to provide a pollution disincentive. Unfortunately, the analogy is a poor one, arguably even inappropriate.

Until recently, the pollution levy system was administered by calculating excess pollution charges based on the excess *concentrations* of pollutants rather than total *mass* of excess pollutants discharged.<sup>163</sup> Much of the revenue from such pollution levies was originally intended to be used to finance pollution control equipment, presumably as a way of taking advantage of the “double-dividend”<sup>164</sup> of pollution taxes or to engage in “revenue-recycling.” To achieve this goal such funds were oftentimes remitted directly to polluters. Few controls were imposed to ensure that the funds were actually used for pollution control purposes, sometimes leading the recipient firms to direct such funds into their operating funds – to be treated in other words like a “rebate” on the pollution tax. As a result, the pollution levy system never achieved the pollution tax goals of providing a significant disincentive for excess pollution emissions and of promoting greater pollution control by making additional funding available for such efforts. Thus, what would otherwise have looked in form like a pollution tax is not at all comparable in substance to a pollution tax.

A better understanding of comparative environmental law also can help more established systems, including in developed nations, identify deficiencies. For example, there is much that the United States can learn about governance systems that take environmental human rights seriously enough to back them specifically in the law. For example, countries all over the world, such as South Africa, India, Turkey, and Brazil have enshrined the right to a clean environment in their constitutions.<sup>165</sup>

The United States has never explicitly provided a right to a clean environment or potable water. Some general analogues can be found in the protections of common law tort, the primary tool for vindicating personal and property harms caused by pollution. Quite possibly that may be attributable to the strong American tradition of providing robust protections for personal and property interests generally, which can also be used to vindicate environment-specific concerns. Nevertheless, the rise of the environmental justice movement in the U.S. in the early 1980s, with its claims of environmental discrimination, has put this into question.<sup>166</sup> The movement’s basic assertion has been that existing individual rights protections are inadequate to protect the environmental interests of racial minorities, the poor and other marginalized groups. The tradition of

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<sup>163</sup> Ma & Ortellano, \_\_\_\_\_

<sup>164</sup> The double-dividend refers to the benefit of pollution taxes to create disincentives for pollution as well as generating revenue that can be used to pay for affirmative pollution reduction and control efforts.

<sup>165</sup> See, Constitution of the Republic of South Africa Act 108 of 1996, Section 24 (“Everyone has the right - (a) to an environment that is not harmful to their health or well-being.”); Constitution of Republic of India articles 48A & 51A; Constitution of Turkey article 17 & 56; 1988 Constitution of Federal Republic of Brazil article 225. See generally James R. May, *supra* note \_\_\_\_; Carl Bruch, Wole Coker, Chris VanArsdale, *Constitutional Environmental Law: Giving Force to Fundamental Principles in Africa*, 26 COLUM. J. ENVTL. L. 131 (2001); Ernst Brandl & Harwin Bungert, *Constitutional Entrenchment of Environmental Protection: A Comparative Analysis of Experiences Abroad*, 16 HARV. ENV. L. REV. 1 (1992); Megan Brynhildsen, *Constitutional Provisions for Environmental Protection*, 1996 COLO. J. INT’L. ENVTL. L. & POL’Y 97 (1996).

<sup>166</sup> See generally Robert Bullard, *Unequal Protection: Environmental Justice And Communities Of Color* (Robert D. Bullard ed., 1994) and *Confronting Environmental Racism: Voices From The Grassroots* (Robert D. Bullard ed., 1993); Luke Cole and Sheila Foster, *FROM THE GROUND UP*.

environmental rights protections enshrined in the constitutions and laws of other regulatory systems suggest alternatives that the United States ought to consider.

For the development of China's environmental governance system, global environmental law has special significance. The sheer size of its population, its rapid economic growth, and the significance of its global environmental impact have made China's regulatory system a key to the future of the planet's environmental welfare and the single most important challenge for the development of environmental law. Among the most prominent issues is, of course, global climate change, to which China has just recently become the largest source of GHG emissions.<sup>167</sup> However, environmental conditions in China also affect the environment throughout the world in other ways. As our ability to trace the fate and transport of pollutants has improved, some scientists believe that 30 percent or more of the mercury found in the western half of the United States originates in China, most of it in emissions from coal-fired powerplants there.<sup>168</sup> In 1999 coal-fired power plants in China emitted 600 tons of mercury into the air, while such plants in the United States emitted only 120 tons. Just as China's mercury emissions affect other countries, however, nearly two-thirds of mercury emissions from U.S. power plants reached beyond U.S. borders.

The U.S. EPA is trying to reduce mercury emissions from U.S. coal-fired power plants over the next several decades<sup>169</sup>. But much of the benefits of these reductions will not be felt if mercury transport from China continues to increase. China is expected to double its production of electric power by the year 2020, in large part by building new coal-fired power plants. If these plants are not required to reduce their mercury emissions, long-range transport of mercury from China will become an even larger source of mercury exposure in the U.S.

There can be little doubt that reform and enhancement of China's environmental governance system are of importance not only for the sake of its own people, but also for the rest of the world. Environmental law can make a significant difference in China's path toward environmental sustainability. In spite of the grim state of China's environment, there is encouraging evidence that the central government is taking these needs seriously. Chief among these developments have been efforts to upgrade China's environmental laws based on a careful study of the experiences of other countries.

Our own personal experiences in China have demonstrated to us the high level of awareness of environmental issues among China's people. There has also been a tremendous amount of interest by Chinese leaders to learn from foreign experience with environmental regulation as they upgrade China's environmental laws. And as environmental protection has become a more urgent priority of the Chinese government,

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<sup>167</sup> Shai Oster, *China Seems Poised to Pass U.S. as Top Greenhouse-Gas Emitter*, WALL ST. J., Apr. 24, 2007, <http://online.wsj.com/article/SB117735208071379218.html>. See also Press Release, Neth. Env'tl. Assessment Agency, China Now no. 1 in CO<sub>2</sub> emissions, USA in second position (June 19, 2007) available at <http://www.mnp.nl/en/service/pressreleases/2007/index.html> (click on title); *China overtakes U.S. in greenhouse gas emissions*, INT'L HERALD TRIB., June 20, 2007, available at <http://www.ihf.com/articles/2007/06/20/business/emit.php>.

<sup>168</sup> Matt Pottinger, Steve Stecklow & John J. Fialka, *Invisible Export – A Hidden Cost of China's Growth: Mercury Migration*, WALL ST. J., Dec. 20, 2004, at A1.

<sup>169</sup> In May 2005 the U.S. EPA issued a regulation to control mercury emissions from coal-fired powerplants, 70 Fed. Reg. 28,606 (2005), but the regulation was vacated by a court in February 2008. *New Jersey v. EPA*, 517 F.3d 574 (D.C. Cir. 2008).



it has not hesitated to import into its environmental laws regulatory policy innovations from other countries, such as emissions trading, effluent charges, and extended product responsibility. For environmental governance in China to be effective, however, the laws must take into account the distinctive characteristics of its overarching legal and political system.

These developments are signs of how global environmental law can assist environmental law reform as well as how a country such as China can contribute to the evolution of this emerging field of study. As time progresses, global environmental law principles will be able to provide a valuable tool box, consisting of the experiences and examples of many environmental regulatory systems, for the enhancement of evolving environmental governance systems of China, the United States, and many other nations.

## Conclusion

Global environmental law is an evolving set of substantive principles, tools, and concepts derived from elements of national and international environmental law. Yet, it also represents a significant shift in the evolution of the environmental law field. No longer can one see the national environmental law systems as distinct or separate from international environmental law or from each other. Instead, global environmental law is emerging as an amalgam from all of these.

And while comparative law scholars in the past might reasonably have described the movement and transfer of concepts from one national legal system to another or to the international systems as acts of “borrowing,” global environmental law indicates that this description has become inapposite. Trends such as convergence, integration, and harmonization are creating a few principal approaches to regulation that are being embraced with local variations, blurring traditional distinctions between national and international law. Environmental legal principles can no longer be seen as belonging to any one particular system, suggesting that their transfer is an act of “lending.” Rather, global environmental law principles have become concepts that are part of a system of global law and thus have their home everywhere. They belong to all of us and are influencing legal development in all jurisdictions and traditions. They are, like the many global environmental goods that they protect, part of the global commons.