

Michigan Journal of Environmental & Administrative Law

Volume 4 | Issue 1

2014

Delinking International Environmental Law & Climate Change

Cinnamon Carlarne

Michael E. Moritz College of Law, Ohio State University

Follow this and additional works at: <http://repository.law.umich.edu/mjeal>

 Part of the [Environmental Law Commons](#), [International Law Commons](#), and the [Public Law and Legal Theory Commons](#)

Recommended Citation

Cinnamon Carlarne, *Delinking International Environmental Law & Climate Change*, 4 MICH. J. ENVTL. & ADMIN. L. 1 (2014).

Available at: <http://repository.law.umich.edu/mjeal/vol4/iss1/1>

This Article is brought to you for free and open access by the Journals at University of Michigan Law School Scholarship Repository. It has been accepted for inclusion in Michigan Journal of Environmental & Administrative Law by an authorized editor of University of Michigan Law School Scholarship Repository. For more information, please contact mlaw.repository@umich.edu.

Michigan Journal of Environmental & Administrative Law

Volume 4 | Issue 1

2014

Delinking International Environmental Law & Climate Change

Cinnamon Carlarne

Michael E. Moritz College of Law, Ohio State University

Follow this and additional works at: <http://repository.law.umich.edu/mjeal>

 Part of the [Environmental Law Commons](#), [International Law Commons](#), and the [Public Law and Legal Theory Commons](#)

Recommended Citation

Cinnamon Carlarne, *Delinking International Environmental Law & Climate Change*, 4 Mich. J. Env'tl. & Admin. L. 1 (2014).

Available at: <http://repository.law.umich.edu/mjeal/vol4/iss1/1>

This Article is brought to you for free and open access by University of Michigan Law School Scholarship Repository. It has been accepted for inclusion in Michigan Journal of Environmental & Administrative Law by an authorized administrator of University of Michigan Law School Scholarship Repository. For more information, please contact mlaw.repository@umich.edu.

DELINKING INTERNATIONAL ENVIRONMENTAL LAW & CLIMATE CHANGE

*Cinnamon Carlarne**

This Article challenges the existing paradigm in international law that frames global efforts to address climate change as a problem of and for international environmental law. The most recent climate reports tell us that warming is unequivocal and that we are already experiencing the impacts of climate change at the domestic level in the United States. Against this backdrop, much has been written recently in the United States about domestic efforts to address climate change. These efforts are important, but they leave open the question of how the global community can work together to address the greatest collective action problem of our time. Focusing on international efforts to address climate change, this Article pushes back against the dominant framing of global climate change as a problem of and for international environmental law. It argues that the static nature of the existing global paradigm brings about two primary harms. First, the failure to address climate change overshadows the larger field of international environmental law in a way that inhibits efforts to address a suite of persistent environmental problems beyond climate change. Second, framing climate change as a traditional environmental law problem constrains efforts to think more creatively about how to address a problem that defies classification as an environmental issue and demands innovative governance approaches. In making the legal case for delinking the debates about international environmental law and global climate change, this Article argues that challenging the existing global paradigm is critical to thinking more constructively about collective action in the climate context.

I.	INTERNATIONAL ENVIRONMENTAL LAW & THE BIGGEST, THE GREATEST, THE MOST IMPORTANT PROBLEM OF THEM ALL	2
II.	THE SCALE OF THE PROBLEM	7
III.	INTERNATIONAL ENVIRONMENTAL LAW BEYOND CLIMATE CHANGE	9
	A. <i>The Narrative of International Environmental Law</i>	9
	B. <i>The Double Negative of the International Environmental Law Frame</i>	14
	C. <i>Taking on the Double Negative: The Inherent Value of International Environmental Law</i>	19

* Associate Professor, Michael E. Moritz College of Law, The Ohio State University. Thanks to Timothy Meyer, Peter Appel, Diane Marie Amann, Harlan Cohen, and all of the students of the Georgia International Law Colloquium for their helpful comments and insight on this Article. Thanks also to Jonathan Rosenbloom for his insightful feedback. Finally, many thanks to my excellent Research Assistants, Kara Ford and Mark Piskorowski.

1. Reframing the Field	24
2. Challenging the Normative Foundations	27
IV. CLIMATE CHANGE BEYOND INTERNATIONAL ENVIRONMENTAL LAW	30
A. <i>Climate Change & International Environmental Law: Global Problem, Global Solution?</i>	33
B. <i>Climate Change & International Environmental Law: Environmental Problem, Environmental Solution?</i>	42
1. Challenging the Conventional Climate Paradigm	42
2. Working Within the Conventional Paradigm	46
3. Widening the Frame: Climate Change as an Energy Issue	48
C. <i>Climate Change & International Environmental Law: Legal Problem, Legal Solution?</i>	53
V. INTERNATIONAL ENVIRONMENTAL LAW & CLIMATE CHANGE LAW AT THE BRINK: THE WAGER OF OUR GENERATION	58

I. INTERNATIONAL ENVIRONMENTAL LAW & THE BIGGEST, THE GREATEST, THE MOST IMPORTANT PROBLEM OF THEM ALL

The problem is great, massive even, and recognition of the problem is widespread. It has been variously characterized by leading legal and political figures as the “biggest global-health threat of the 21st century,”¹ “the greatest market failure the world has seen,”² the “biggest human rights issue of the 21st century,”³ the “great moral challenge of our time,”⁴ “the new great threat to biodiversity,”⁵ “by far the most important and fundamental issue

1. Anthony Costello et al., *Managing the Health Effects of Climate Change*, 373 THE LANCET 1693, 1693 (2009).

2. Alison Benjamin, *Stern: Climate Change a ‘Market Failure’*, THE GUARDIAN, Nov. 29, 2007, <http://www.theguardian.com/environment/2007/nov/29/climatechange.carbonemissions> (quoting Sir Nicholas Stern).

3. *Former Irish President Mary Robinson: Climate Change the Biggest Human Rights Issue of Our Time*, DEMOCRACY NOW (Dec. 4, 2012), http://www.democracynow.org/2012/12/4/fmr_irish_president_mary_robinson_climate (quoting Mary Robinson).

4. *Climate Change: The Great Moral Challenge of Our Generation*, YOUTUBE (Aug 6, 2007), <https://www.youtube.com/watch?v=CQZvpRjGtGM>.

5. Convention on Biological Diversity, *Climate Change and Biodiversity: The Next Great Threat to Biodiversity* (2008), available at <http://www.cbd.int/doc/meetings/cop/cop-09/media/cop9-press-kit-cc-en.pdf>.

affecting all of our lives,”⁶ “the worst problem facing the world today,”⁷ and, ultimately, “the greatest challenge of our generation.”⁸ The problem is global climate change.

In contrast, the response has been weak, dismal even, and recognition of these governance failings is widespread. The failings are not for want of general consensus on the seriousness of the issue, or for want of evidence of the ways in which human-induced climate change will affect humans and non-humans in the short and long term.⁹ Nor are they for want of effort on the part of many, particularly those working through and in support of the United Nations Framework Convention on Climate Change (UNFCCC).¹⁰ At the highest level, recognition of the scale of the problem has prompted great political consensus—near unanimous consensus—on the need to act.

Most significantly, participation in the UNFCCC is “near-universal,” with 195 parties having ratified the treaty.¹¹ This means that 195 states, territories, and regional economic organizations—representing all UN Member States—agree that “human activities have been substantially increasing the atmospheric concentrations of greenhouse gases, that these increases enhance the natural greenhouse effect, and that this will result on average in an additional warming of the Earth’s surface and atmosphere and may adversely affect natural ecosystems and humankind” and, accordingly, that it is the goal of the Parties pursuant to the treaty to “stabiliz[e] . . . greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.”¹² On this, the global community has agreed since 1992.

If every UN Member State is a party to the treaty, what then is the problem? The problem, simply put, is that the existing global paradigm, which aligns and consigns climate change within the boundaries of interna-

6. Bryan Walsh, *Q&A: The U.N.’s Ban Ki-Moon on Climate Change*, TIME, Dec. 11, 2009, http://content.time.com/time/specials/packages/article/0,28804,1929071_1929070_1947173,00.html.

7. Kate Sheppard, *Harry Reid: ‘Climate Change Is The Worst Problem Facing The World Today’*, HUFFINGTONPOST, March 6, 2014, http://www.huffingtonpost.com/2014/03/06/harry-reid-climate-change_n_4914683.html.

8. Steve Almasy, *John Kerry: Climate Change as Big a Threat as Terrorism, Poverty, WMDs*, CNN, Feb. 17, 2014, <http://www.cnn.com/2014/02/16/politics/kerry-climate/> (quoting John Kerry).

9. INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, *Summary for Policymakers* in CLIMATE CHANGE 2013: THE PHYSICAL SCIENCE BASIS (T.F. Stocker et al. eds., 2013).

10. U. N. Framework Convention on Climate Change, May 9, 1992, 1771 U.N.T.S. 107, available at <http://www.unfccc.de/resource/conv/index.html> [hereinafter UNFCCC].

11. See UNFCCC, *Status of Ratification of the Convention*, https://unfccc.int/essential_background/convention/status_of_ratification/items/2631.php (last visited Nov. 5, 2014).

12. UNFCCC, *supra* note 10, at art. 2.

tional environmental law, is flawed. This Article challenges this paradigm and argues that climate change is an issue of such scale and complexity that it defies resolution through the constrained channels of an international environmental treaty. It is a challenge rooted in our models of development, capitalism, free trade, and state sovereignty, and we are no more likely to be able to “solve” it with the tools of international environmental law alone than we are likely to be able to solve it using any type of linear approach that ignores the economic and socio-legal realities that shape the field.

Yet, we continue to characterize and approach climate change “just like any other international environmental problem.”¹³ In so doing, we constrain ourselves within the limits of international environmental law.

International environmental law is a field that “has had significant success”¹⁴ in its short history. And, the continued evolution of international environmental law is vital to global efforts to identify and respond to shared problems. Even when confronting less complex dilemmas, however, international environmental law, at best, “is part—but only part—of the solution.”¹⁵ International environmental law has limits. Limits that we understand. Limits that allow it to thrive in certain circumstances but doom it to fall short in other circumstances. Limits that mean that when confronting a problem that “affects core development issues: poverty, water scarcity, disease, regional and political instability, global health;”¹⁶ that necessitates “a restructuring of the foundations of modern economies, especially the energy systems;”¹⁷ and, according to the Secretary-General of the United Nations, Ban Ki Moon, that “affects the future of humanity, and . . . the future of the planet Earth,” we have hit those limits.

These limits reveal the degree to which we now exist in a world where human influence over the planetary system is so pervasive as to create conditions wherein radical instability¹⁸ and radical interconnectedness define

13. TIMO KOIVUROVA, INTRODUCTION TO INTERNATIONAL ENVIRONMENTAL LAW 187 (2012).

14. DANIEL BODANSKY, THE ART AND CRAFT OF INTERNATIONAL ENVIRONMENTAL LAW 16 (2010). Definitions of international environmental law vary with some being primarily descriptive and others being more normative or intentional in nature. As a general matter, however, international environmental law is generally understood as “encompass[ing] the entire corpus of international law, public and private, relevant to environmental issues or problems.” PATRICIA BIRNIE, ALAN BOYLE, & CATHERINE REDGWELL, INTERNATIONAL LAW AND THE ENVIRONMENT 3 (2009).

15. *Id.*

16. Walsh, *supra* note 6.

17. KOIVUROVA, *supra* note 13, at 200.

18. See, e.g., Robin Kundis Craig, Becoming Landsick: Rethinking Sustainability in an Age of Continuous, Visible and Irreversible Change in RETHINKING SUSTAINABLE DEVELOPMENT TO MEET THE CLIMATE CHANGE CHALLENGE (Jessica Owley & Keith Hirokawa, eds.) (forthcoming 2015) (arguing to “view constant change as the norm, not as an aberration to be ignored,

the parameters of our interactions. As a global community, we find ourselves confronting a problem that defies traditional legal boundaries, that defies planetary boundaries.¹⁹ Running up against legal boundaries, we continue to operate largely within them. By operating within these legal boundaries, we run full speed ahead towards our planetary boundaries.

This is a critical moment.²⁰ It is a moment to be as direct as possible in asking the question: are we facing a situation that requires more than incremental change, more than working with and within what we have? It is the same question that the global community asked in the late 1960s and 1970s when confronted with a suite of shared environmental problems and answered with an affirmative and optimistic “yes.”²¹ Yes, we need new concepts and new tools to deal with an emerging set of issues. We need transformative change. In this way, international environmental law was born. And, in its brief history, as Bodansky notes, international environmental law has proved to be “neither a panacea nor a sham”²² but, at best, “a thirty percent solution.”²³ It has proved vital. But it will never be enough unless we find ways to improve its effectiveness, broaden its reach, and situate it at the core of international law and policy.

Now, we confront a new set of problems and, specifically, one particularly intractable problem. It is a problem that demands that we buck inertia and ask—with the same level of optimism, creativity, and determination that drove us in the early days of environmental law—what can we do to address more effectively a problem that constitutes *something more* than the

avoided, or resisted” and that adapting to climate change “is most fundamentally about coping with continual, and often unpredictable, change.”).

19. For explanations and analysis of the concepts of planetary boundaries, see, e.g., Rakhyn E. Kim & Klaus Bosselmann, *International Environmental Law in the Anthropocene: Towards a Purposive System of Multilateral Environmental Agreements*, 2 *TRANSNAT'L ENVIL. L.* (2013); Will Steffen et al., *How Defining Planetary Boundaries Can Transform Our Approach to Growth* 2 *SOLUTIONS* (2011), available at <http://www.thesolutionsjournal.com/node/935>; J. Rockström et al., *Planetary Boundaries: Exploring the Safe Operating Space for Humanity*, 14 *ECOLOGY & SOC'Y* 32 (2009); J. Rockström et al., *A Safe Operating Space for Humanity*, 461 *NATURE* 472–75 (2009).

20. Or, in memory of Professor Joseph Sax, it is a moment to be opportunistic. See Douglas Martin, *Joseph Sax, Who Pioneered Environmental Law, Dies at 78*, *NEW YORK TIMES*, March 11, 2014, at B16, available at http://www.nytimes.com/2014/03/11/us/joseph-l-sax-who-pioneered-legal-protections-for-natural-resources-dies-at-78.html?_r=0 (statement of Joseph Sax) (“I think if you’re going to work on issues like environmental protection, you have to be opportunistic in the sense that you wait until the time is ripe, and then you can get some things done.”).

21. See, e.g., United Nations Conference on the Human Environment, Stockholm, Sweden, June 5-16, 1972, *Declaration on the Human Environment*, U.N. Doc. A/CONF.48/14, reprinted in 11 *I.L.M.* 1416 (1972).

22. BODANSKY, *supra* note 14, at 15.

23. *Id.*

greatest international environmental law challenge of our time? A problem that is rooted in global change, for as the growth of the global economy has brought us closer and closer together, making us more and more dependent on one another, the lines have become blurred between what we call an environmental problem and what we call a problem of fundamental human security, health, and well-being.

Within this starkly defined context, this Article challenges the wisdom of the dominant paradigm surrounding global efforts to address climate change. A paradigm in which global climate change negotiations remain largely confined to the channels of international environmental law. The central question, to borrow from James Gustave Speth, is “[c]an international environmental law deal with the big issues?”²⁴

In unpacking this question, this Article calls for critical thinking about the role and value of international environmental law in a world increasingly shaped by global climate change. In key part, this Article pushes back against the dominant framing of global climate change as a problem of and for international environmental law, narrowly understood. It makes the case that it is necessary to challenge the existing paradigm in international law that frames global efforts to address climate change as a problem of and for international environmental law.

This Article argues that the static nature of the existing global paradigm brings about two primary harms. First, the failure to address climate change overshadows the larger field of international environmental law in a way that inhibits efforts to address a suite of persistent environmental problems beyond climate change. Second, framing climate change as a traditional environmental law problem constrains efforts to think more creatively about how to address a problem that defies classification as an environmental issue and demands innovative governance approaches.²⁵

This Article challenges the dominant paradigm in an attempt to encourage more focused debate on the harms we inflict when we unnecessarily constrain our framing of the climate change problem. Following this introduction, the Article proceeds in four parts. Part II briefly chronicles the scale of the climate change problem. Part III pushes back against a pervasive perception that the failures within the global climate change regime reflect failings and general lethargy within the larger field of international environ-

24. James Gustave Speth, *International Environmental Law: Can it Deal With the Big Issues?*, 28 VT. L. REV. 779, 779 (2004).

25. As Speth characterized it: “[T]he response of the international community has missed the mark in two key respects. First, it opted for IEL as the primary means of attack while badly neglecting measures that could more directly correct the underlying drivers of large-scale deterioration. Second, having selected IEL as the chosen instrument, it never really gave IEL a chance to succeed.” *Id.* at 785.

mental law. Part IV then looks beyond international environmental law to reveal the extent to which climate change is, but is much more than, a problem of international environmental law.²⁶ The Article concludes by emphasizing that the continuing inability of international environmental law to “solve” the climate change problem undermines neither the international environmental law project, nor the climate change project. Stepping back to view the system critically enables us to use more effectively the tools of international environmental law to address climate change and the host of other environmental problems we face.

II. THE SCALE OF THE PROBLEM

The evidence is overwhelming and, year-by-year, it continues to accumulate and, in most respects, become more dire.

In 2014, the lead scientific body on climate change—the Intergovernmental Panel on Climate Change (IPCC)—released its Fifth Assessment Report (AR5).²⁷ This report, which is the most comprehensive report on climate change compiled to date, warns of the increasing scope and intensity of climate-related effects on human and non-human life absent efforts both to mitigate and to prepare for climate change. In critical part, AR5 concludes that “[h]uman influence on the climate system is clear”²⁸ and that:

[w]arming of the climate system is unequivocal, and since the 1950s, many of the observed changes are unprecedented over decades to millennia. The atmosphere and ocean have warmed, the amounts of snow and ice have diminished, sea level has risen, and the concentrations of greenhouse gases have increased.²⁹ . . . Each of the last three decades has been successively warmer at the Earth’s surface than any preceding decade since 1850.³⁰

The earth is already warming; humans are influencing and being affected by this process. Unless we modify our behavior—by reducing emissions of greenhouse gases substantially—we will experience continued warming and continued changes in all components of the climate system.

26. See Peter Singer, *ONE WORLD: THE ETHICS OF GLOBALIZATION* (2002).

27. INTERNATIONAL PANEL ON CLIMATE CHANGE, FIFTH ASSESSMENT REPORT (AR5) available at <http://www.ipcc.ch/report/ar5/> (last visited Oct. 15 2014). More than 830 authors representing up to 85 countries contributed to this report.

28. INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, *Climate Change 2014: Impacts, Adaptation and Vulnerability*, at 12 (March 2014), available at http://ipcc-wg2.gov/AR5/images/uploads/IPCC_WG2AR5_SPM_Approved.pdf

29. IPCC (2013), *supra* note 9, at 4.

30. *Id.* at 5.

And, these changes will be significant.³¹ According to the IPCC, global surface temperature increases will be between 3.7C and 4.8C in 2100 if no new action is taken. The temperature increases will be substantial and the effects on humans will be severe.

Reiterating that the threats are not only real but also happening in real time, following the release of AR5, in May 2014, the U.S. Global Change Research Program released the *Third National Climate Assessment*. This report, which is considered the authoritative and comprehensive report on climate change and its impacts in the United States, declared that: “[c]limate change, once considered an issue for a distant future, has moved firmly into the present.”³² The report gives context to these impacts, noting that:

Corn producers in Iowa, oyster growers in Washington State, and maple syrup producers in Vermont are all observing climate-related changes that are outside of recent experience. So, too, are coastal planners in Florida, water managers in the arid Southwest, city dwellers from Phoenix to New York, and Native Peoples on tribal lands from Louisiana to Alaska. This National Climate Assessment concludes that the evidence of human-induced climate change continues to strengthen and that impacts are increasing across the country.³³

The effects are real; they are widespread; they are already present; they will become more pervasive over time. These are the takeaways of the report. Ultimately, as it cautions, “[t]he observed warming and other climatic changes are triggering wide-ranging impacts in every region of our country and throughout our economy.”³⁴ Climate change is not just a problem for future generations; it is also a problem for present generations. Climate change is not just a problem for the developing world; it is also a problem for the United States and every other country in the world. In every context

31. See *id.* at 20 (According to the IPCC, “[g]lobal surface temperature change for the end of the 21st century is *likely* to exceed 1.5°C relative to 1850 to 1900 for all RCP scenarios except RCP2.6. It is *likely* to exceed 2°C for RCP6.0 and RCP8.5, and *more likely than not* to exceed 2°C for RCP4.5. Warming will continue beyond 2100 under all RCP scenarios except RCP2.6.”).

32. U.S. GLOBAL CHANGE RESEARCH PROGRAM, CLIMATE CHANGE IMPACTS IN THE UNITED STATES: THE THIRD NATIONAL CLIMATE ASSESSMENT 1 (2014), available at http://nca2014.globalchange.gov/system/files_force/downloads/low/NCA3_Climate_Change_Impacts_in_the_United%20States_LowRes.pdf?download=1.

33. *Id.*

34. *Id.* at 1.

and at every level of governance, there is a pressing need “to prepare for and respond to its far-reaching implications.”³⁵

The AR5 and the *Third National Climate Assessment* deepen our understanding of what we already knew: climate change creates new threats, exacerbates existing threats, and exposes and deepens existing vulnerabilities and social, political, and economical inequalities. It is merciless in its reach and, absent massive shifts in the way that we consume energy and in the attention we pay to climate adaptation efforts, the impacts will only become more severe and pervasive over time.

Scientific consensus creates the imperative to act. Yet, legal and political efforts fail to keep pace. Future efforts to address both climate change and the larger suite of persistent environmental problems require that we challenge the conventional paradigm to deepen our understanding of opportunities that exist within and beyond its edges.

III. INTERNATIONAL ENVIRONMENTAL LAW BEYOND CLIMATE CHANGE

The field of international environmental law emerged in response to a set of issues that predated understanding of the climate problem. As a field of law, it has evolved both separate to, and in response to global climate change negotiations. In recent years, however, struggles within the climate change context have worked to deepen skepticism about the general utility of international environmental law, while also likely reducing resources and overshadowing developments within this arena. In order to understand the role that international environmental law can play in addressing the above-mentioned suite of persistent environmental problems, we must look more closely at the internal dynamics of international environmental law, the interplay between climate change and international environmental law, and, ultimately, the limits of international environmental law as it currently exists.

A. *The Narrative of International Environmental Law*

International environmental law is a field or, perhaps, a concept that elicits varied, but often strong, reactions from those who encounter it. Many people, even some of those working within the field, see international environmental law as a stagnant, floundering, or jurisprudentially un-

35. *Id.* at 2.

grounded³⁶ area of law³⁷ In one version, the field is both theoretically ungrounded and largely ineffectual because of its rapid evolution, its conflicted or even absent normative underpinnings, and its lack of traditional compliance and enforcement mechanisms. It is a fragmented field in need of tidying up and redirecting.³⁸ This view predates the epic challenges and perceived failures of the international community in its ongoing efforts to combat global climate change, but it has been intensified by them. As climate change becomes more and more central to the field, and as the climate change debate continues to focus—at least in significant part—on the possibilities of state-centered reforms and their persistent failures, the story of the floundering and failures surrounding international environmental law deepens.

The focus on climate change both overshadows work on other environmental issues and encourages a deepening sense of frustration about the possibility of successfully addressing not only climate change, but also other environmental problems, ranging from mercury pollution, to persistent organic pollution, to biodiversity protection, to fisheries management, to marine pollution, to desertification, and beyond.

36. See, e.g., Kim & Bosselmann, *supra* note 19, at 287 (bemoaning the “absence of a clearly agreed, unifying goal to which all international regulatory regimes and organizations are legally bound to contribute.”).

37. See, e.g., DANIEL BODANSKY, *THE ART AND CRAFT OF INTERNATIONAL ENVIRONMENTAL LAW* 15 (2010) (noting that “many take the opposite view, namely, that international environmental law is simply rhetoric, which does not affect how states behave.”). See also Joel B. Eisen, *From Stockholm to Kyoto and Back to the United States: International Environmental Law’s Effect on Domestic Law*, 32 U. RICH. L. REV. 1435, 1438-39 (1999) (describing international environmental law as “a largely sanctionless creation ‘full of sound and fury, signifying nothing.’”) (quoting WILLIAM SHAKESPEARE, *MACBETH* act 5, sc. 5). For further analysis of international environmental law, see, e.g., ELLI LOUKA, *INTERNATIONAL ENVIRONMENTAL LAW: FAIRNESS, EFFECTIVENESS, AND WORLD ORDER* (2006); *THE EFFECTIVENESS OF INTERNATIONAL ENVIRONMENTAL REGIMES: CAUSAL CONNECTIONS AND BEHAVIORAL MECHANISMS* (Oran R. Young ed., 1999); *THE IMPLEMENTATION AND EFFECTIVENESS OF INTERNATIONAL ENVIRONMENTAL COMMITMENTS: THEORY AND PRACTICE* (David G. Victor, Kal Raustiala & Eugene B. Skolnikoff eds., 1998). For a discussion of these issues in the context of domestic environmental law, see generally A. Dan Tarlock, *Is There a There There in Environmental Law?*, 19 J. LAND USE & ENVIL. L. 213 (2004). See also Alyson C. Flournoy, *In Search of an Environmental Ethic*, 28 COLUM. J. ENVIL. L. 63, 68 (2003) (noting that the “superficiality and inadequacy of our knowledge of the values embedded in these laws becomes still more apparent when we ask why we care about the environment.”).

38. See, e.g., Frank Biermann et al., *The Fragmentation of Global Governance Architectures: A Framework for Analysis*, 9 GLOBAL ENVIL. POL. 14, 17 (2009); Cinnamon Piñon Carlarne, *Good Climate Governance: Only a Fragmented System of International Law Away?*, 30 LAW & POLY 450, 469 (2008); Sebastian Oberthür & Thomas Gehring, *Conceptual Foundations of Institutional Interaction*, in *INSTITUTIONAL INTERACTION IN GLOBAL ENVIRONMENTAL GOVERNANCE: SYNERGY AND CONFLICT AMONG INTERNATIONAL AND EU POLICIES* 19 (Thomas Gehring & Sebastian Oberthür eds., 2006).

In many ways, there is a sense that the field is stuck. Yet, even in the shadow of this perception, environmental law has been evolving. Behind the climate shadow, work has continued in traditional³⁹ and non-traditional ways.⁴⁰ In spite of this continuing work, the field and those working within the field—as scholars, policy makers, and activists—struggle against the weight of the inertia that they confront at critical points. This is especially true as international environmental law becomes—rightly or wrongly—more and more synonymous with climate change and the struggles of the climate change regime.

The common narrative of international environmental law, however, does not do justice to the ways in which international environmental law has evolved, the many and complex ways in which it operates, and the potential that exists to make it work even more effectively moving forward. This is because, as is evident upon closer look, international environmental law is not, and cannot be just that. It is not just law or, more accurately, not just

39. See, e.g., Minamata Convention on Mercury, Oct. 10, 2013, available at http://www.mercuryconvention.org/Portals/11/documents/conventionText/Minamata%20Convention%20on%20Mercury_e.pdf; Whaling in the Antarctic (Austl. v. Japan: N.Z. Intervening), Judgment (Mar. 31, 2014), available at <http://www.icj-cij.org/docket/files/148/18136.pdf>; Conference of the Parties to the Convention on Biological Diversity, Nagoya, Japan, Oct. 18–29, 2010, *Report of the Tenth Meeting of the Conference of the Parties to the Convention on Biological Diversity*, Annex I (Jan. 20, 2011) [hereinafter *Nagoya Protocol*]; Tseming Yang & Robert Percival, *The Emergence of Global Environmental Law*, 36 *ECOLOGY L.Q.* 615, 645–49 (2009) (describing the growth of international environmental law, including the application of traditional legal instruments to global environmental problems). See also Andrew Schatz et al., *International Environmental Law*, 47 *INT'L LAW.* 435, 438–39 (2013) (discussing progress under the umbrella of the Montreal Protocol to speed up the phase-out of hydrofluorocarbons and potent GHGs used as alternatives to ozone-depleting substances).

40. There are an increasing number of non-legal instruments, such as private standards and principles, being used to address issues of international environmental importance. See, e.g., Evisa Kica & Diana M. Bowman, *Regulation by Means of Standardization: Key Legitimacy Issues of Health and Safety Nanotechnology Standards*, 53 *JURIMETRICS J.* 11, 19 (2012); THE EQUATOR PRINCIPLES, <http://www.equator-principles.com> (last visited Nov. 6, 2014); Kirsten Mikadze, *Public Participation in Global Environmental Governance and the Equator Principles: Potential and Pitfalls*, 13 *GERMAN L.J.* 1383, 1387 (2012) (describing the Equator Principles as “a voluntary code initially launched in 2003 by several large international banks and revised in 2006 (with a further revised version, after numerous delays, on track for finalization and release in October 2012). Adopters of the EPs—all large, globally facing financial institutions—pledge to adhere to a framework of environmental and social assessment in their project financing activities. They build upon the Performance Standards for Social and Environmental Sustainability created by the International Finance Corporation (IFC) and upon the World Bank’s Environmental, Health, and Safety Guidelines. The EPs apply to projects of \$10 million or more. The adopters—referred to as Equator Principles Financial Institutions (EPFI)—commit to providing finance only when the conditions embodied in ten principles are met.”).

public international law.⁴¹ It never has been. It is also not just international, at least as traditionally understood. It is global⁴² and regional and transnational⁴³ and much more. And, finally, international environmental law is also not just “environmental”. That is, the issues that it struggles to address no longer comfortably wear the narrow label of “environmental issues”.

41. Notions of global environmental governance capture the shortcoming in the description of international environmental law. Global environmental governance has been variously defined as “the attempt by an international network of organizations to moderate and minimize the damage done to the environment by human societies” and “a ‘political reform programme’ aimed at achieving ‘more effective global regimes and organizations’ and defined by politics that involve nonstate actors, the rise of new forms of institutions, and the rise of different layers of rule-making and rule-implementation.” Melissa Dorn, *Summary of the Conference on Global Environmental Governance*, 19 GEO. INT’L ENVTL. L. REV. 303, 305 (2007); *International Environmental Law-Making and the International Court of Justice*, Remarks by Ronald J. Bettauer, 105 AM. SOC’Y INT’L L. PROC. 61, 64 (2001) (quoting Frank Biermann, Bernd Siebenhüner & Anna Schreyögg, *Global Environmental Governance and International Organizations*, in INTERNATIONAL ORGANIZATIONS IN GLOBAL ENVIRONMENTAL GOVERNANCE 2 (Frank Biermann, Bernd Siebenhüner & Anna Schreyögg eds., 2009)).

42. There is an emerging body of law that describes the larger field as the field of global environmental law. See, e.g., Yang & Percival, *supra* note 39, at 616–17 (defining global environmental law as “the set of legal principles developed by national, international, and transnational environmental regulatory systems to protect the environment and manage natural resources. As a body of law, it is made up of a distinct set of substantive principles and procedural methods that are specifically important or unique to governance of the environment across the world. It includes: (1) public international environmental law, commonly used to refer to the set of treaties and customary international legal principles governing the relations between nations; (2) national environmental law, which describes the principles used by national governments to regulate the behavior of private individuals, organizations, and subnational governmental entities within their borders; and (3) transnational law, which describes the set of legal principles used to regulate the cross-border relationships between private individuals and organizations.”).

43. The emerging field of transnational environmental law views the many ways in which global, regional, and national systems of environmental law and policy evolve and interact. See, e.g., Cinnamon Carlarne & Daniel Farber, *Law Beyond Borders: Transnational Responses to Global Environmental Issues*, 1 TRANSNAT’L ENVTL. L. 13 (2012) (describing transnational environmental law as a “way of looking at environmental law as an interconnected and interactive global network in response to interconnected, and often global, challenges.”). See also Gregory Schaffer & Daniel Bodansky, *Transnational Unilateralism and International Law*, 1 TRANSNAT’L ENVTL. L. 31, 32 (2012) (defining transnational environmental law as “much broader than that of international environmental law. Transnational environmental law encompasses all environmental law norms that apply to transboundary activities or that have effects in more than one jurisdiction The concept of transnational environmental law thus includes national environmental regulation that has horizontal effects across jurisdictions—for example, by providing regulatory models to other countries or by applying to or affecting the behavior of producers and consumers within them. It also includes the development of standards by private actors that have effects across borders, such as through product certification and labeling regimes. In practice, the transnational environmental law process sometimes includes international law as part of a single diachronic law-making process, but oftentimes does not.”).

They are that, but they are not just that: they are big economic issues;⁴⁴ big health issues;⁴⁵ big human rights issues;⁴⁶ big human issues.

When we characterize climate change as an environmental issue to be dealt with using the traditional tools of environmental law, we constrain our decision makers. Climate change is a problem firmly rooted in our basic post-war global economic model, a model that is based on an underlying assumption that free trade and economic growth can simultaneously improve global economic welfare *and* address distributive justice concerns. The flaws of this model are widely recognized,⁴⁷ yet it remains largely intact and healthy economic relations constitute the pillar around which most global negotiations revolve. Thus, while we recognize climate change as a problem that emerges from and in every important way implicates the dominant economic model, we continue to direct policymaker to frame climate change as a traditional environmental problem to be addressed in a way that does not interfere too much with this model.⁴⁸

Recognizing the existence of this framing and the general parameters of the system allows a more frank discussion about international environmental law and, ultimately, about climate change law.

44. See, e.g., INTERNATIONAL MONETARY FUND, *THE FISCAL IMPLICATIONS OF CLIMATE CHANGE* (2008); Cinnamon Carlarne, *Risky Business: The Ups and Downs of Mixing Economics, Security and Climate Change*, 10 MELB. J. INT'L L. 439 (2009); NICHOLAS STERN, *THE ECONOMICS OF CLIMATE CHANGE: THE STERN REVIEW* (2007); Kenneth J. Arrow, *Global Climate Change: A Challenge to Policy*, in *ECONOMIST'S VOICE* (June 2007).

45. See, e.g., Michael Depledge & Cinnamon Carlarne, *Sick of the Weather: Climate Change, Human Health and International Law*, Opinion Piece, 9 ENVTL. L. REV. 231 (2007).

46. See, e.g., John H. Knox, *Human Rights Principles and Climate Change*, in *THE OXFORD HANDBOOK OF INTERNATIONAL CLIMATE CHANGE LAW* (forthcoming 2015) (copy on file with author).

47. See, e.g., THOMAS PIKETTY, *CAPITAL IN THE TWENTY-FIRST CENTURY* (Arthur Goldhammer trans.) (2014).

48. See, e.g., KOIVUROVA, *supra* note 13, at 206 (noting that “[c]ontaining climate change will require intervention with the basics of modern economies: first and foremost, a radical reduction in the use of all fossil fuels.”). See also Richard H. Steinberg, *Power and Cooperation in International Environmental Law*, in *RESEARCH HANDBOOK IN INTERNATIONAL ECONOMIC LAW* 511-23 (2007) (providing a discussion of the ways in which multilateral environmental agreements use trade-related tools - i.e., traditional economic tools - but do so tentatively in the shadow of international trade law, and often without clearly settled answers as to the validity of trade related environmental measures, noting, in key part, that “GATT/WTO dispute settlement system has never fully condoned a challenged trade restriction aimed at extrajurisdictional environmental activity.”).

B. *The Double Negative of the International Environmental Law Frame*

The story of international environmental law is a complex one; international environmental law has struggled since its inception to find workable solutions to complex problems. As our understanding of the problems has evolved, the thinking has become more creative but also more constrained by, on one hand, bureaucracy and, on the other hand, political apathy on the part of key players. This is not an Article that sees or even seeks the seeds of epic revival of international environmental law writ large. At the global level, our environmental “problems are more deeply entrenched”⁴⁹ and more pervasive than ever. No one disputes that. Yet, it is also not an Article that seeks to depict the international environmental law project as anything less than what it is, which is a project that is dynamic, evolving, and essential.

Fundamentally, this is a conversation about rediscovering international environmental law not just as more than traditional Westphalian, state-centric international law,⁵⁰ which it is now widely recognized to be, but also as a field in crisis. It is a field in crisis because the problems it confronts are far more than environmental problems and require responses far eclipsing those available using traditional or even novel tools of environmental law. It is also about recognizing that, while efforts to improve the internal functioning of international environmental law are vital and must continue,⁵¹ there is a parallel and urgent need to push the efforts beyond the borders of international environmental law.

At its roots, much of environmental law—whether domestic or international—involves finding ways to internalize the negative externalities of human behavior. However, we have reached a point where the externalities

49. Speth, *supra* note 24, at 780.

50. See, e.g., Cinnamon Carlarne, *Rethinking a Failing Framework: Adaptation and the Future of the Global Climate Change Regime*, 25 GEO. INT'L ENVTL. L. REV. 1 (2012).

51. For just a sampling of the good work being done in this area, see Edith Brown Weiss, *Legacies of Louis B. Sohn: The United Nations Charter and International Environmental Law*, 16 WILLAMETTE J. INT'L L. & DISP. RESOL. 212-24 (2008); Maria Ivanova, Yale Ctr. for Env'tl. Law and Pol., *Can the Anchor Hold?: Rethinking the United Nations Environment Programme for the 21st Century*, 37-38 (Yale School of Forestry & Env'tl. Studies 2005); FRANK BIERMANN ET AL., A WORLD ENVIRONMENT ORGANIZATION: SOLUTION OR THREAT FOR EFFECTIVE INTERNATIONAL ENVIRONMENTAL GOVERNANCE? (Frank Biermann & Steffen Bauer eds., 2005); David Driesen, *Thirty Years of International Environmental Law: A Retrospective and Plea for Reinvention*, 30 SYRACUSE J. OF INT'L L. & COM., 353 (2003); Daniel C. Esty & Maria Ivanova, *Toward a Global Environmental Mechanism* in WORLDS APART: GLOBALIZATION AND THE ENVIRONMENT (James G. Speth ed., 2003); Steve Charnovitz, *A World Environment Organization*, 27 COLUM. J. ENVTL. L. 323 (2002); Daniel C. Esty, *International Governance at the Global Level: The Value of Creating a Global Environmental Organization*, in ENVIRONMENT MATTERS ANNUAL REVIEW: 1999-2000 12 (World Bank ed., 2000).

of human actions, particularly energy consumption, are too great to be internalized within the domain of environmental law. As a result, these critical problems—particularly climate change—can no longer be relegated to a set of actors and institutions fundamentally incapable of either offering effective responses on their own, or of garnering the political will that is essential to do so based on a traditional framing of the problems.

A decade ago, back when we were still at least marginally optimistic about climate change, Speth posed the question that animates this article: “[c]an international environmental law deal with the big issues?”⁵² Our subsequent experiences in the climate context suggest that no, it cannot.

But, more importantly, our experiences with the climate change regime reveal that the current big issues that international environmental law confronts do not rest comfortably within the parameters of any one legal field. It should therefore be no surprise that international environmental law cannot deal with the big issues, when the big issues include problems such as climate change, global biodiversity loss, food security, and desertification.

Perhaps, in its youth, international environmental law was capable of dealing with what were then big environmental issues, for example, ocean dumping, whaling (as the issue evolved into an environmental one), and even ozone depletion. These were big issues that, for all practical purposes, sat comfortably within the field of international environmental law and were distinct enough to be dealt with by a discrete body of law.

But, today the big issues that international environmental law confronts are just that—big global issues. They sit squarely within and in important ways implicate questions of environmental law, as traditionally understood. However, in both cause and consequence, they also implicate areas of law and policy far removed from the traditional environmental space.

Climate change is certainly the easiest example of this imperfect fit. One cannot talk about climate change without talking about free trade, about energy choices, about humanitarian law, or human rights law, or intellectual property law.⁵³

We know this all too well. Yet, both within and beyond the field, when we ask ourselves: *can international environmental law deal with the big issues?*; *can international environmental law solve the climate problem?* This framing achieves the dual harm of undermining the legitimacy of the larger field of international environmental law and impairing our ability to find more ef-

52. Speth, *supra* note 24, at 779.

53. Equally, within environmental law circles, we are all well aware that efforts to protect global biodiversity are intricately linked with our successes and failures in the climate change context—both in relation to mitigation and adaptation. But, so too, is the future of global biodiversity linked to patterns of economic development, trade law, intellectual property law, corporate law and more.

fective responses to very big, very pressing global problems central among which is climate change.

The initial framing of climate change as an environmental issue was expected and made sense. This framing spurred an extensive base of policy-makers, scientists, and activists into identifying the contours of the problem and mobilizing political action around the problem. Accepting this static framing in perpetuity, however, limits efforts moving forward.

Yet there has been a persistent hesitancy to push too hard for a reframing of the key questions or for a deeper integration of these questions within other political discussions and legal regimes. There has not been a concerted effort to push for other more politically relevant and powerful institutions to pose a reframed version of the core question.⁵⁴ For example: can trade law deal with the big issues? If that question was asked, those big issues would include climate change and the question, similarly, would be answered: no. These legal institutions were not designed to address these larger questions.

It is, therefore, no surprise that, when asked a much smaller version of the question involving the interaction between multilateral environmental agreements and trade agreements, the World Trade Organization (WTO) deflects the question or refers it elsewhere. For example, when addressing questions of the compatibility between trade and the environment back in 2001, even before climate change became a dominant concern, former Director General of the WTO, Dr. Supachai Panitchpakdi, advocated the creation of a World Environment Organization, noting that the WTO lacks the capacity to “align the agreements on environmental protection and trade agreement[s] without having another organization that would be able to police, to referee, to make it rational and to make doing so acceptable for a rules-based organization like the WTO.”⁵⁵

Dr. Panitchpakdi is not alone in trying to avoid dealing with nominally environmental issues within a trade-based organization. More recently, a 2009 publication jointly authored by the WTO and the United Nations

54. An exception to this was the effort in 2007, led by the United Kingdom, to encourage the UN Security Council to address climate change as a security issue. See Permanent Rep. of the United Kingdom of Great Britain and Northern Ireland, Letter dated Apr. 5, 2007 from the Permanent Rep. of the United Kingdom of Great Britain and Northern Ireland to the United Nations Addressed to the President of the Security Council, U.N. Doc. S/2007/186 (Apr. 5, 2007); Press Release, Security Council, Security Council Holds First Ever Debate on the Impact of Climate Change on Peace, Security, Hearing over 50 Speakers, U.N. Press Release SC/9000 (Apr. 17, 2007), available at <http://www.un.org/News/Press/docs/2007/sc9000.doc.htm>. See also *Risky Business*, *supra* note 44, at 461.

55. Supachai Panitchpakdi, *The Evolving Multilateral Trade System in the New Millennium*, 33 GEO. WASH. INT'L L. REV. 419, 446 (2001).

Environment Programme (UNEP) noted that while “trade intersects with climate change in a multitude of ways,” a “multilateral agreement with binding commitments establishing the framework for reducing greenhouse gas emissions for post-2012 and beyond should be the main instrument for addressing climate change.”⁵⁶ This position represents the dominant view that, despite well-recognized issue intersections, neither the WTO nor its legal counterparts in other areas of law should bear the responsibility for addressing far-reaching environment issues such as climate change.⁵⁷

It is to be expected, then, when we see the WTO’s official position on climate change framed thusly: “measures to address climate change need to be fully compatible with the international community’s *wider* ambitions for economic growth and human advancement.”⁵⁸ This framing aptly illustrates the larger problem. It is not that anyone truly advocates that climate change should be dealt with exclusively, or even primarily, by the WTO. This is neither feasible nor desirable. It is that climate change continues to be framed as a cabined issue; an issue to be dealt with through the institutions of international environmental law using tools that do not conflict with other areas of international law; an issue to be addressed second to *wider* interests in growth and advancement. This framing belies all of the evidence that we now have that suggests that climate change is intrinsically bound up in, and inseparable from wider interests, whether those wider interests are—as the WTO suggests—economic growth, or whether they are human health or equity, as other key international institutions might propose. As Boyle and Singh note in reference to the relationship between trade and climate:

If trade is part of the problem, then alterations to the WTO trade regime may also have to be part of the answer. Climate change policy cannot be implemented through the UNFCCC alone but requires co-ordination of policies and measures by a range of international institutions inside and outside the UN system.⁵⁹

56. Ludivine Tamiotti et al., United Nations Environment Programme & the World Trade Organization, *Report, Trade and Climate Change* (2009), available at http://www.wto.org/english/res_e/booksp_e/trade_climate_change_e.pdf.

57. See, e.g., Duncan Brack, *Environmental Treaties and Trade: Multilateral Environmental Agreements and the Multilateral Trading System*, in *TRADE, ENVIRONMENT, AND THE MILLENNIUM* 321, 341–49 (Gary P. Sampson & W. Bradnee Chambers eds., 2d ed. 2002).

58. WTO, *The Multilateral Trading System and Climate Change: Introduction*, http://www.wto.org/english/tratop_e/envir_e/climate_intro_e.htm (last visited Nov. 4, 2014) (emphasis added).

59. Alan Boyle & Navraj Singh Ghaleigh, *Climate Change and International Law Beyond the UNFCCC*, in *THE OXFORD HANDBOOK OF INTERNATIONAL CLIMATE CHANGE LAW* (Cinnamon Carlarne, Richard Tarasofsky, & Kevin Gray eds., forthcoming 2015) (further noting that

Yet the dominant framing continues largely to ignore the reality that climate change is embedded within all these fields and in constant interaction with them.⁶⁰

Even as we deepen understanding of the many and varied ways in which the causes and consequences of climate change overlap with, for example—questions of trade, human rights,⁶¹ humanitarian law, intellectual property,⁶² and security law—the walls between these disciplines remain firmly in place. Climate change remains largely outside of these walls and relegated to the processes of international environmental law despite the fact that the existing process is increasingly seen as flawed, if not failing.⁶³

This fragmentation is neither unexpected nor legally reprehensible. This is how international law works. It is an essential but idealized system that often conceptualizes and treats issues in isolation. It is a system that lacks the capacity to depict and respond to the ways in which climate change, alongside other issues of international importance, involves a “constant process of conflict and interaction”⁶⁴ between seemingly distinct systems, both natural and human. These other international institutions were not designed with climate change in mind; they are guided by and constrained by member state-approved missions that may not (and, often, do not) include a mandate to address climate change.

And, so the frame persists and the double negative persists: we undermine the evolving field of international environmental law by conflating it with the struggles of the climate change regime, and we undermine global stability by delaying more dynamic efforts to address climate change at every level of governance.

“[t]he difficulty of ensuring coherence among competing bureaucratic mandates should neither be underestimated, nor overstated.”).

60. Cf. Sean Sayers, *On the Marxist Dialectic*, 14 *RADICAL PHIL.* 9, 10 (1976) (stating “[a]ll real, concrete things are part of the world of interaction, motion and change; and for them we must recognize that things are not merely self-subsistent, but exist essentially in relation to other things.”).

61. See, e.g., Knox, *supra* note 46.

62. See, e.g., Joshua Sarnoff, *Intellectual Property and Climate Change, with an Emphasis on Patents and Technology Transfer*, in *THE OXFORD HANDBOOK OF INTERNATIONAL CLIMATE CHANGE LAW* (forthcoming 2015) (copy on file with author).

63. See, e.g., HARRO VAN ASSELT, *THE FRAGMENTATION OF GLOBAL CLIMATE GOVERNANCE: CONSEQUENCES AND MANAGEMENT OF REGIME INTERACTIONS* 244-73 (2014) (noting the “promises and pitfalls” of the fragmentation in the global climate change governance); Carlarne, *Rethinking a Failing Framework*, *supra* note 50, at 4.

64. Sayers, *supra* note 60, at 12.

C. Taking on the Double Negative: The Inherent Value of International Environmental Law

Behind the climate shadow, the conversations that are taking place on questions of international environmental law and larger systems of global environmental governance reflect ongoing and inevitable struggles within the field.⁶⁵ The struggles within the field of international environmental law are real. It would be unhelpful to deflect or deny that there are problems that are internal to the field and central to its ability to function effectively.

One need only look at the constant quagmire surrounding UNEP and the global environmental governance⁶⁶ and sustainability debates,⁶⁷ or the inefficiencies and insular politics among and between the secretariats to the multilateral environmental agreements, or the continuing deliberations about compliance with international obligations⁶⁸ to understand how, even

65. See, e.g., Mikadze, *supra* note 40, at 1383 (noting that “[d]espite the increasing urgency of global environmental issues, international environmental law continues to struggle for relevancy and effectiveness.”).

66. Defined variously as “the attempt by an international network of organizations to moderate and minimize the damage done to the environment by human societies,” Melissa Dorn, *Summary of the Conference on Global Environmental Governance*, 19 GEO. INT’L ENVTL. L. REV. 303, 305 (2007), and a “‘political reform programme’ aimed at achieving ‘more effective global regimes and organizations’ and defined by politics that involve nonstate actors, the rise of new forms of institutions, and the rise of different layers of rule-making and rule-implementation.” Ronald J. Bettauer, Remarks, *International Environmental Law-Making and the International Court of Justice*, 105 AM. SOC’Y INT’L L. PROC. 61, 64 (2001) (quoting Frank Biermann, Bernd Siebenhüner & Anna Schreyögg, *Global Environmental Governance and International Organizations*, in INTERNATIONAL ORGANIZATIONS IN GLOBAL ENVIRONMENTAL GOVERNANCE 2 (Frank Biermann, Bernd Siebenhüner & Anna Schreyögg eds. 2009)).

67. See, e.g., Leadership Council of the Sustainable Development Solutions Network, *An Action Agenda for Sustainable Development: Report to the U.N. Secretary General* (June 6, 2013), available at <http://unsdsn.org/wp-content/uploads/2013/06/140505-An-Action-Agenda-for-Sustainable-Development.pdf>.

68. See, e.g., David P. Vincent, *The Trans-Pacific Partnership: Environmental Savior or Regulatory Carte Blanche?*, 23 MINN. J. INT’L L. 101, 144-45 (2013) (noting that a “[l]ack of enforcement remains the largest issue as countries are unwilling to give up their sovereignty or economic advantages.”). For further discussion on questions of compliance and enforcement in international environmental law, see generally Jutta Brunnée, *Enforcement Mechanisms in International Law and International Environmental Law*, 1 ENVTL. L. NETWORK INT’L REV. 1 (2005); EDWARD MILES ET AL., ENVIRONMENTAL REGIME EFFECTIVENESS: CONFRONTING THEORY WITH EVIDENCE (2002); ORAN YOUNG, THE EFFECTIVENESS OF INTERNATIONAL ENVIRONMENTAL REGIMES: CAUSAL CONNECTIONS AND BEHAVIORAL MECHANISMS (1999); ENGAGING COUNTRIES: STRENGTHENING COMPLIANCE WITH INTERNATIONAL ENVIRONMENTAL ACCORDS, (Edith Brown Weiss & Harold K. Jacobson eds., 1998); THE IMPLEMENTATION AND EFFECTIVENESS OF INTERNATIONAL ENVIRONMENTAL COMMITMENTS (David G. Victor, Kal Raustiala & Eugene B. Skolnikoff eds., 1998); Thomas Bernauer, *The Effect of International Environmental Institutions: How We Might Learn More*, 49

with problems internal to the field, there is ample room for improvement.⁶⁹ As Anton notes, it is “only in a very few instances, such as environmentally safe ship construction requirements and limits on production and consumption of ozone depleting substances, that the law has had a major salutary impact on environmental problems.”⁷⁰ The clear and visible victories of international environmental law are few. Moreover, we are operating within a context with “almost universally and continually declining global environmental indicators,” which “present[s] a host of disturbing existential prospects for generations in being and, even more so, for posterity to follow.”⁷¹ Put another way, “environmental regulation strategies of all kinds have failed to keep pace with the rapid evolution of technologies, products, and markets presenting a new generation of environmental challenges.”⁷²

This combination of deteriorating environmental indicators and relatively few resounding victories creates a difficult environment within which to continue efforts to address even long-standing environmental challenges, such as marine dumping, trade in endangered species, or fisheries management. It makes it even more difficult to tackle new, more complex issues such as how to control the presence of persistent organic pollutants in the environment,⁷³ or how to regulate the still poorly understood risks associated with nanotechnology,⁷⁴ or, of course, how to address global climate change. In fact, as one commentator has noted, “the world’s ever-rising

INT’L ORG. 351 (1995); Martti Koskenniemi, *Breach of Treaty or Non-Compliance? Reflections on the Enforcement of the Montreal Protocol*, 3 Y.B. INT’L ENVTL. L. 123, 123 (1992).

69. See, e.g., Frank Biermann, *The Case for a World Environment Organization*, 42 ENV’T 22, 28-29 (2000); William Boyd, *Climate Change, Fragmentation, and the Challenges of Global Environmental Law: Elements of a Post-Copenhagen Assemblage*, 32 U. PA. J. INT’L L. 457 (2010); Karen Morrow, *Rio+20, the Green Economy and Re-orienting Sustainable Development*, 14 ENVTL. L.R. 279, 294 (2012); Philippe Le Prestre & Benoit Martimort-Asso, *Issues Raised by the International Environmental Governance System (Institut du Développement Durable et des Relations Internationales)*, Global Governance, (Paper No. 12, 2004), available at http://www.iddri.org/Publications/Collections/Idees-pour-le-debat/id_0412bis_bma%26leprestre_IEG-failures_eng.pdf; Fred Pearce, *Beyond Rio, Green Economics Can Give Us Hope*, THE GUARDIAN, June 28, 2012, available at <http://www.guardian.co.uk/environment/2012/jun/28/rio-green-economics-hope>.

70. Donald K. Anton, *The “Thirty-Percent Solution” and the Future of International Environmental Law*, 10 SANTA CLARA J. INT’L L. 2, 212 (2013).

71. *Id.* at 211.

72. Sanford Gaines, *Reimagining Environmental Law for the 21st Century*, 44 ENVTL. L. REP. NEWS & ANALYSIS 10188, 10197 (2014).

73. See Stockholm Convention on Persistent Organic Pollutants, May 22, 2001, 2256 U.N.T.S. 119.

74. For good discussions of the regulatory challenges surrounding nanotechnology, see Douglas A. Kysar, *Ecologic: Nanotechnology, Environmental Assurance Bonding, and Symmetric Humility*, 28 UCLA J. ENVTL. L. & POL’Y 201 (2010); David A. Strifling, *Environmental Federalism and the Effective Regulation of Nanotechnology*, 2010 MICH. ST. L. REV. 1129 (2010).

emissions of greenhouse gases reveal the inadequacy of both traditional and market-based strategies in the face of relentless population growth, economic expansion, and rising energy consumption.”⁷⁵

The picture is grim, but the gloom should not mask the swift development that has taken place within the field of international environmental law. This rapid development—flaws and all—has been critical to containing environmental degradation. As bad as it is, it could be much worse.

International environmental law grew up side-by-side with the rapid growth of the global economy and the concomitant growth in consumption, with all the negative externalities—environmental and otherwise—that exponentially increased consumption entailed. International environmental law, in common with domestic environmental law, has never had the luxury of mapping out the field and developing a comprehensive strategy for addressing environmental problems in a pre-crisis, joined-up, and efficient way. Rather, international environmental law arose out of an immediate need to address pre-existing and rapidly worsening environmental degradation, and has been on the run ever since as existing problems deepened and new problems emerged.

Thus, while the processes of global change proceeded apace from the 1960s onward, so too did the development of international environmental law. According to one study, states have negotiated more than 1100 multilateral, 1500 bilateral, and 250 “other” environmental treaties, with the vast majority of these being negotiated since 1960.⁷⁶ As Anton chronicles in greater detail:

By the early 1990s, it was estimated that 885 different international environmental legal instruments (hard and soft) and 139 different major international environmental treaties were in existence. In the years between 1972 and 1992 alone, it was said that more than 50 multilateral treaties relating to the protection of the marine environment were concluded. In the years between 1970 and 2004, three hundred and forty-eight multilateral treaties and one hundred and forty nine protocols were concluded, an average of roughly 100 combined instruments every five years until 2005.⁷⁷

75. *Id.*

76. See, e.g., Ronald B. Mitchell, *International Environmental Agreements Database Project*, UNIV. OF OR., <http://iea.uoregon.edu> (last visited Nov. 6, 2014).

77. Anton, *supra* note 70, at 213-14.

These instruments embody a variety of regulatory approaches and reflect an evolving set of authoritative, if not fully agreed upon, environmental norms.⁷⁸ As Anton suggests:

[L]ooking back now, the rapid growth of international environmental conventional norms that took place over roughly the last thirty years of the twentieth century is striking. Few fields have burst on the scene with as much unplanned fecundity.⁷⁹

‘Unplanned fecundity’ aptly characterizes the highs and lows of the emergence of international environmental law. It grew from a tiny seed to a tangled garden in a short period of time. The garden, while impressive, is poorly laid out, lacks organization, and is walled-in. Yet it grows and it offers plenty of reaping goods. To make it more productive, the garden needs tidying. Even with the best gardener at the helm, however, the garden will never produce enough of the right type of food to feed us all.

Thus, we confront a dual challenge. The first part of the challenge is to re-envision international environmental law as a dynamic field⁸⁰ that is buoyed, but not constrained, by pre-existing tools. The second part of the challenge is to recognize that, no matter how dynamic the field of international environmental law is or how dynamic the people are who work within this field, it is constrained in ways—both institutional and political—that require a rethinking of how we frame questions that emerge from, but extend beyond categorization as “environmental”.

As an initial step, it is essential to recognize that, although imperfect, we have and continue to accomplish much through the primary vehicle of

78. As Bodansky points out, the term norm “has a double meaning, one descriptive and the other prescriptive. . . . In speaking of international environmental “norms,” we are using the term in its prescriptive rather than its descriptive sense.” BODANSKY, *supra* note 14, at 87.

79. Anton, *supra* note 70, at 212. For a detailed discussion of the post 1960s development of domestic environmental law in the United States and other developed countries, see Gaines, *supra* note 72, at 10192-97.

80. For efforts to re-envision international environmental law, see, e.g., Karen Scott, *International Law in the Anthropocene: Responding to the Geoengineering Challenge*, 34 MICH. J. INT'L L. 309, 313 (2013) (noting that “[t]he term—international environmental law—is commonly used as shorthand to refer to the treaties, customs, and principles applied in the context of environmental protection and conservation However, this Article will argue that international environmental law not only refers to an area of international regulation, but also comprises a distinct set of norms and principles applicable to states in a situation where the global environment is at risk of serious or irreversible harm.” *Id.* Scott further suggests that “no longer merely the descriptor of a substantive area of international regulation, international environmental law can be said to consist of the norms and principles generally applicable to activities that pose a risk of significant harm to the transboundary or commons environment.” *Id.* at 357. See also Yang & Percival, *supra* note 39.

international environmental law, multilateral environmental agreements.⁸¹ That good is not always discreetly or exclusively legal, although it sometimes is. It includes using traditional tools of law to reduce ozone-depleting substances,⁸² to bring whales back from the brink of extinction,⁸³ to adjudicate ongoing disputes about alleged violations of the International Convention on the Regulation of Whaling,⁸⁴ to curb interstate trade in endangered species,⁸⁵ to begin addressing the mercury problem,⁸⁶ and to answer questions about the obligation of sovereign states to conduct environmental impact assessments.⁸⁷ It also includes identifying emerging environmental problems⁸⁸ and prompting the creation of new domestic systems of environmental law and regional environmental partnerships. It includes facilitating the creation of new networks of civil society actors.⁸⁹ It includes prompting

81. As Yang and Percival note, multilateral environmental agreements “have been successful in promoting harmonization and coordination of environmental norms among nations and enhancing the integration of national regulatory norms into transnational regimes.” Yang & Percival, *supra* note 39, at 628.

82. See generally Montreal Protocol on Substances that Deplete the Ozone Layer, Sept. 16, 1987, 1522 U.N.T.S. 3 (entered into force Jan. 1, 1989). For discussion of the success of the Montreal Protocol, see, e.g., Timothy Meyer, *From Contract to Legislation: The Logic of Modern International Lawmaking*, 14 CHI. J. INT’L L. 559, 601 (describing how, in addition to its successes in the ozone context, the Montreal Protocol has become “the most successful climate change regime in existence” due to recent and ongoing efforts “to control ozone-depleting substances with climate effects”); U.N. Env’t Programme, *A Success in the Making: The Montreal Protocol on Substances that Deplete the Ozone Layer* 11 (2008), http://ozone.unep.org/Publications/MP_A_Success_in_the_making-E.pdf.

83. See generally Wil Burns, *The International Whaling Commission and the Future of Cetaceans: Problems and Prospects*, 8 COLO. J. INT’L ENVTL. L. & POL’Y 31 (1997); Cinnamon Piñon Carlarne, *Saving the Whales in the New Millennium: International Institutions, Recent Development, and the Future of the International Whaling Policies*, 24 VA. ENVTL. L.J. 1 (2005).

84. See Whaling in the Antarctic (Austl. V. Japan: N.Z. Intervening), Judgment (Mar. 31, 2014), available at <http://www.icj-cij.org/docket/files/148/18136.pdf>.

85. See, e.g., Steinberg, *supra* note 48, at 518-19.

86. See, e.g., Tseming Yang, *The Minamata Convention on Mercury and the Future of Multilateral Environmental Agreements*, available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2509589.

87. See, e.g., Donald K. Anton, *Case Concerning Pulp Mills on the River Uruguay* (Argentina V. Uruguay) (Judgment) [2010] ICJ Rep (20 April 2010), 17 AUSTRALIAN INT’L L.J. 213 (2010).

88. For example, the evolving governance debate in the context of geoengineering. See generally CLIMATE CHANGE GEOENGINEERING? PHILOSOPHICAL PERSPECTIVES, LEGAL ISSUES, AND GOVERNANCE FRAMEWORKS (Wil Burns & Andrew L. Strauss, eds. 2013); Scott, *supra* note 80; Cinnamon Carlarne, *Arctic Dreams and Geoengineering Wishes*, 49 COLUM. J. TRANSNAT’L L. 602 (2011).

89. See, e.g., Peter J. Spiro, *Non-Governmental Organizations and Civil Society*, in THE OXFORD HANDBOOK OF INTERNATIONAL ENVIRONMENTAL LAW 770 (Daniel Bodansky et al. eds., 2007); Asher Alkoby, *Global Networks and International Environmental Lawmaking: A Disclosure Approach*, 8 CHICAGO J. INT’L L. 377 (2008); LINDA A. MALONE & SCOTT PASTERNAK, DE-

the creation of new programs such as Reducing Emissions from Deforestation and Forest Degradation (REDD),⁹⁰ and new private codes such as the Equator Principles⁹¹ that emerge from, but operate beyond, legal institutions and are becoming increasingly important in influencing behavior at every level of governance. It includes pushing environmental questions into other legal forums. It includes empowering people to identify environmental inadequacies and environmental injustices. It includes all of this and more. Moving forward, it is important to build upon existing successes while continuing to push efforts within the field further.

Reflecting the push to shift the parameters of dialogue in ways that reflect and support the dynamic ways in which international environmental law is evolving, there are vibrant debates about both the framing of the field and the normative foundations of the field. Each is considered in turn.

1. Reframing the Field

In the first instance, there is growing recognition of, and pushback against the constraints that the “international environmental law” label imposes. This framing of the field is rooted in well-established notions of the primacy of the state and traditional modes of lawmaking. Yet, this label fails to adequately encapsulate a more pluralistic vision⁹² of the ways in which international environmental issues are governed. Consequently, scholars increasingly refer to actions within this space as falling under the heading of “global environmental law,” or “transnational environmental law,” or, even more broadly, “global environmental governance.”

Global environmental law is a term that has picked up currency as a framing mechanism for encapsulating the intersections between traditional

FENDING THE ENVIRONMENT: CIVIL SOCIETY STRATEGIES TO ENFORCE INTERNATIONAL ENVIRONMENTAL LAW (2004); Kal Raustiala, *The Participatory Revolution in International Environmental Law*, 21 HARVARD ENV'L L.R. 537 (1997).

90. See, e.g., David Takacs, *Forest Carbon (REDD+), Repairing International Trust, and Reciprocal Contractual Sovereignty*, 37 VT. L. REV. 653, 717 (2013); William Boyd, *Climate Change, Fragmentation, and the Challenges of Global Environmental Law: Elements of a Post-Copenhagen Assemblage*, 32 U. PA. J. INT'L L. 457, 517-43 (2011); CHARLIE PARKER ET AL., *THE LITTLE REDD+ BOOK: A GUIDE TO GOVERNMENTAL AND NON-GOVERNMENTAL PROPOSALS FOR REDUCING EMISSIONS FROM DEFORESTATION AND DEGRADATION* (2008), available at http://www.amazonconservation.org/pdf/redd_the_little_redd_book_dec_08.pdf.

91. THE EQUATOR PRINCIPLES, <http://www.equator-principles.com> (last visited Nov. 6, 2014); see also Mikadze, *supra* note 40, at 1387; Douglas Sarro, *Do Lenders Make Effective Regulators? An Assessment of the Equator Principles on Project Finance*, 13 GERMAN L.J. 1522 (2012).

92. For further discussion of legal pluralism in international law, see Paul Schiff Berman, *Global Legal Pluralism*, 80 S.C. L. REV. 1155, 1159 (2007); Paul Schiff Berman, *From International Law to Law and Globalization*, 43 COLUM. J. TRANSNAT'L L. 485 (2005).

systems of public international environmental law, transnational systems of environmental law, and domestic systems of environmental law.⁹³ Growing acceptance of the notion of global environmental law offers a construct for conceptualizing the interactions between traditional and novel systems of environmental law and policy. In large part, global environmental law is a descriptive tool. As two of its leading proponents characterize it:

Global environmental law is the set of legal principles developed by national, international, and transnational environmental regulatory systems to protect the environment and manage natural resources. As a body of law, it is made up of a distinct set of substantive principles and procedural methods that are specifically important or unique to governance of the environment across the world. It includes: (1) public international environmental law, commonly used to refer to the set of treaties and customary international legal principles governing the relations between nations; (2) national environmental law, which describes the principles used by national governments to regulate the behavior of private individuals, organizations, and subnational governmental entities within their borders; and (3) transnational law, which describes the set of legal principles used to regulate the cross-border relationships between private individuals and organizations.⁹⁴

In other words, using the term global environmental law allows us to conceptualize and, thus, more directly enable “a field of law that is international, national, and transnational in character all at once.”⁹⁵

Similarly, there is a growing body of literature that seeks to understand environmental issues within a transnational context, approaching the field as one involving questions of transnational environmental law. Transnational environmental law provides a “way of looking at environmental law as an interconnected and interactive global network in response to interconnected, and often global, challenges.”⁹⁶ In this way, as Takacs describes it in the context of REDD+, “it extends beyond the traditional purview of international environmental law (comprised of treaties, customary and general principles of international law, and the work of jurists) to include domestic legislation that has influence across national boundaries and (as in the instant case) private standards that operate at multiple levels.”⁹⁷ In common

93. Yang & Percival, *supra* note 39, at 616.

94. *Id.* at 616-17.

95. *Id.*

96. Carlarne & Farber, *supra* note 43, at 13.

97. Takacs, *supra* note 90, at 717-18.

with global environmental law, transnational environmental law is understood as being broader and more inclusive than international environmental law; it includes and takes account of international environmental law while extending beyond it to understand the relationship between national environmental law, regional environmental law, private environmental codes, and more.⁹⁸

The relationship between global environmental law and transnational environmental law has not yet been adequately explored but, at least as understood by some, global environmental law is a broader, more inclusive label that includes transnational environmental law under its umbrella.⁹⁹

Beyond the emergence of more recent concepts of global environmental law and transnational environmental law, there are long-standing efforts to view the policy space as one more fittingly understood as occupied by an emerging system of global environmental governance. Global environmental governance refers to a “‘political reform programme’ aimed at achieving ‘more effective global regimes and organizations’ and defined by politics that involve nonstate actors, the rise of new forms of institutions, and the rise of different layers of rule-making and rule-implementation.”¹⁰⁰ The general theory behind global environmental governance is that governance encompasses but also reaches beyond the boundaries of law. The concept of global environmental governance includes the processes, institutions, and outcomes of international environmental law, as well as the peripheral public, private, and intergovernmental activities that shape and support international law-making processes.¹⁰¹ In this way, the concept of global environmental governance reflects the realities of the international system, where law is a fundamental, but nevertheless, component part of a larger system that creates the parameters of international relations and international rules, regulations—both soft and hard¹⁰²—as well as norms and codes that influence behavior in relation to environmental issues.

These concepts—global environmental law, transnational environmental law, and global environmental governance—have emerged along parallel tracks and there is a need for greater understanding of the ways in which

98. See e.g., Schaffer & Bodansky, *supra* note 43, at 32.

99. See Tsemina Yang, *The Emerging Practice of Global Environmental Law*, 1 *TRANSNAT'L ENVIL. L.* (2012).

100. Remarks by Bettauer, *supra* note 41, at 64; see also Dorn, *supra* note 41, at 305.

101. Carlarne, *supra* note 38, at 454.

102. See BODANSKY, *supra* note 14, at 99-100 (discussing the differences—real and perceived—between “soft law” and “hard law” within the context of international environmental law); see also Pierre-Marie Dupuy, *Soft Law and the International Law of the Environment*, 12 *MICH. J. INT'L L.* 420 (1991), for further discussions of the meaning and role of soft law in international environmental law.

the concepts intersect and overlap. Of importance here, they all share a common goal of reflecting the impact on the space of environmental law and policy of a broader set of actors, processes, issues, and institutions across multiple levels of governance. The vibrant thinking in this area also reveals how, despite undeniable institutional setbacks and an ever-expanding suite of seemingly intractable problems, efforts abound to use both old and new tools to better understand and address these challenges.

It is too early to tell whether one or more of these concepts will stick and what the stakes of resulting conceptual rifts might be. Nevertheless, it is evident that the emergence of these concepts reflects a desire to find new, more useful ways to understand and, in understanding, to facilitate shifts in the way that environmental “law” making is taking place within the global arena. This is a conversation that sits at the center of efforts to improve the vitality of international environmental law; it is equally central to the evolving climate change debate.

2. Challenging the Normative Foundations

Deliberative thinking about the normative foundations of international environmental law complements the debate that is taking place around the framing of the field. While questions of the normative foundations and, in particular, the underlying principles of international environmental law are long-standing and have been the subject of great discourse over the past few decades,¹⁰³ the nature of the debate has expanded in recent years. This expansion is largely attributable to patterns of global environmental change, foremost among which is climate change, and the accompanying onset of a new era in which humans and the natural world are deeply interconnected, and in which human and natural systems cannot be viewed as separate and distinct. In this new era, christened the Anthropocene,¹⁰⁴ humans are

103. There is a great deal of scholarly work exploring principles of international environmental law, foremost among which is PHILIPPE SANDS & JACQUELINE PEEL, *PRINCIPLES OF INTERNATIONAL ENVIRONMENTAL LAW* (3d ed. 2012). Other excellent contributions in this area include: SUMUDU ATTAPATU, *EMERGING PRINCIPLES OF INTERNATIONAL ENVIRONMENTAL LAW* (2014); ELOISE SCOTFORD, *ENVIRONMENTAL PRINCIPLES AND THE EVOLUTION OF ENVIRONMENTAL LAW* (2014).

104. Paul J. Crutzen & Eugene F. Stoermer, *The “Anthropocene”*, *GLOBAL CHANGE NEWSLETTER*, May 1, 2000, at 17, 17–18, available at <http://www.igbp.net/download/18.316f18321323470177580001401/1316517410973/NL41.pdf>. See also Will Steffen et al., *The Anthropocene: From Global Change to Planetary Stewardship*, 40 *AMBIO* 739 (2011); Scott, *supra* note 80, at 315-16 (noting that what is “agreed upon is that the Anthropocene openly challenges the assumption “of an environment outside or separate from human existence” and forces us to confront the fact that earth system characteristics “are neither ‘human’ nor ‘natural,’ but are in fact highly integrated composites of both.”) (quoting Brad Allenby, *The Anthropocene As Media: Information Systems and the Creation of the Human Earth*, 52 *AM. BEHAV. SCIENTIST* 107, 110 (2008)).

viewed as the primary drivers of environmental change.¹⁰⁵ As we drive global environmental change we find ourselves stumbling towards a series of planetary boundaries.¹⁰⁶ These are boundaries that we have only recently identified, and the contours of which we are still trying to understand.

The concept of planetary boundaries derives from work published by a group of scientists in *Nature* in 2009.¹⁰⁷ According to this framework, planetary boundaries “define the safe operating space for humanity with respect to the Earth system and are associated with the planet’s biophysical subsystems or processes.”¹⁰⁸ In key part, the authors “identify the Earth-system processes and associated thresholds which, if crossed, could generate unacceptable environmental change.”¹⁰⁹ These parameters include nine planetary processes for which we must define planetary boundaries: “climate change; rate of biodiversity loss (terrestrial and marine); interference with the nitrogen and phosphorus cycles; stratospheric ozone depletion; ocean acidification; global freshwater use; change in land use; chemical pollution; and atmospheric aerosol loading.”¹¹⁰ Each of these processes is critical to the self-regulating capacity of the Earth system and to staying within its biophysical thresholds.¹¹¹ Put simply, “collectively, these planetary boundaries define the safe operating space for humanity with respect to the Earth system,” and “crossing any one of the planetary boundaries may trigger non-linear changes in the functioning of the Earth system, thereby challenging social-ecological resilience at regional to global scales.”¹¹²

Recognition of the existence of planetary boundaries—and the ways in which we are rapidly approaching many of these boundaries—has prompted renewed interest in the normative foundations of international environmental law and, particularly, in its lack of a *grundnorm*—or a fundamental norm providing the underlying basis for the legal system.¹¹³ Starting from the premise that environmental law is a control system that can be used to help

105. Will Steffen, Paul J. Crutzen & John R. McNeill, *The Anthropocene: Are Humans Now Overwhelming the Great Forces of Nature?*, 36 *AMBIO* 614 (2007).

106. J. Rockström et al., *A Safe Operating Space for Humanity*, 461 *NATURE* 472 (2009). See also Rakhyun E. Kim & Klaus Bosselmann, *International Environmental Law in the Anthropocene: Towards a Purposive System of Multilateral Environmental Agreements*, 2 *TRANSNAT'L ENVIL. L.* 285 (2013).

107. Rockström et al., *supra* note 19.

108. *Id.* at 290.

109. *Id.*

110. *Id.*

111. *Id.*

112. Kim & Bosselmann, *supra* note 19, at 289.

113. *Id.* at 290; see also Arun Krishnan, *A Concise Interpretation of Hans Kelsen's Pure Theory of Law*, *SOC. SCI. RES. NETWORK ELEC. J.* 6-7 (2009), available at <http://ssrn.com/abstract=1521569> (describing Hans Kelsen's theory of the *grundnorm*).

achieve ecological stability, we can view international environmental law as a fragmented system lacking internal cohesion. As a result, the field is characterized by inconsistencies and ineffectiveness. Consequently, patterns of environmental degradation persist resulting in the onset of the Anthropocene.

Within the Anthropocene, the argument goes, as the many layers of human-human and human-nature interconnectedness are revealed, the shortcomings of our system of international environmental law become clearer and more urgent.¹¹⁴ As human influence on the environment becomes more pervasive, the need for a coherent and effective system of international environmental law becomes more pressing. Yet, the absence of a unifying goal condemns international environmental law to a life of incoherency and ineffectiveness.

In order to breathe life into a faltering system, Kim and Bosselmann suggest that we must define an ultimate purpose for international environmental law—a *grundnorm*—and that that ultimate purpose must be to protect “the biophysical preconditions that are essential for long-term sustainable development.”¹¹⁵ That is, they propose a *grundnorm* for international environmental law premised on the notion of planetary boundaries. Protecting and restoring planetary boundaries offers a strong candidate for a unifying norm for international environmental law, they argue, because it allows us, first, to conceptualize the limits of the Earth’s life-support system and, second, to center environmental governance systems around the necessity of staying within those limits. Recognizing the need to protect and restore global ecological integrity as the *grundnorm* of international environmental law would create a normative hierarchy within the field. This, in turn, would enhance legitimacy, cohesion, and effectiveness across the policy space.

Kim and Bosselmann’s theory offers a new and creative idea for strengthening our system of international environmental law even as we look beyond the traditional system to find workable solutions to complex problems. Although this is not the only example of innovative thinking about the normative foundations of international environmental law, Kim and Bosselmann’s idea highlights innovation within the field and the dynamic nature of on-going efforts to critically analyze what tools we have at our disposal to strengthen core systems.¹¹⁶

114. Kim & Bosselmann, *supra* note 19, at 286; see also Thijs Etty et al., *Norms, Networks, and Markets: Navigating New Frontiers in Transnational Environmental Law*, 2 *TRANSNAT’L ENVTL. L.* 203, 205 (2013).

115. Kim & Bosselmann, *supra* note 19, at 288.

116. It is beyond the parameters of this Article to delve into the topic, but Kim and Bosselmann’s article also picks up on an ongoing debate within international environmental

It is beyond the purview of this Article to attempt to more thoroughly map the evolution that is taking place within the field of international environmental law. This brief engagement with the internal dynamics of the field is important as it highlights the harms that result from allowing the struggles within the climate change regime to overshadow the larger field of international environmental law and, in so doing, deflect energy and attention from efforts within this larger space to remain dynamic. The ability of the field to remain dynamic becomes ever more important as we confront an increasingly complex and persistent suite of environmental problems.

In the end, a critical part of improving efforts to address environmental problems big and small is to think more critically about not only what can be done internally within the field to improve its effectiveness, but also where the limits of international environmental law are and what to do when we reach those limits. When we talk about the failure of international environmental law to address climate change and other complex environmental problems these failures do not belong solely, or even primarily to international environmental law. These failures are collective and pervasive and they require us to reassess what work the label of international environmental law is doing to inhibit more effective efforts to address these big global environmental issues; these big human issues.

Moving forward, conversations about global environmental problems should start by recognizing that “[i]nternational environmental law is consequential. It does matter. It should matter much more.”¹¹⁷ But, these conversations should also recognize that systems and actors outside of international environmental law are also consequential. They do matter. Their actions and inactions should matter much more in the conversation about efforts to address problems that are, but are also much more than, problems of international environmental law.

IV. CLIMATE CHANGE BEYOND INTERNATIONAL ENVIRONMENTAL LAW

Framing climate change, at the global level, as a problem of and for international environmental law casts a shadow over the field that masks the ways in which efforts to address global environmental problems are evolving and deflects from conversations about how to further improve the functioning of the field. Yet, this static framing produces an even greater harm.

law of the wisdom of continuing to hold out ‘sustainable development’ as a driving principle of international environmental law. *Id.* at 307. *Cf.* Anton, *supra* note 70 (providing a critique of sustainable development and, in particular, critiquing sustainable development as merely a cloak for continuing patterns of economic growth).

117. Anton, *supra* note 70, at 212.

Framing climate change as an international environmental law problem and assigning it almost exclusively to the forums of international environmental law—here, the UNFCCC and, to a lesser degree, the now wilting Kyoto Protocol¹¹⁸—allows policymakers to opt-out too easily. The parties to the UNFCCC are tasked with framing a global approach to addressing climate change that informs state actors as to their legal obligations¹¹⁹ and, in so doing, encourages the formulation of state-based efforts to address climate change that, in turn, ushers in a comprehensive response to the problem. The nature of this task ignores global political realities across a number of planes.

Every facet of the framing is flawed or, more accurately, incomplete. The failings of this framing have been recognized for some time, with more acute understanding following the Copenhagen Climate Change Conference in 2009¹²⁰—the nadir for global climate change law and policy. Nevertheless, the framing persists. And, despite all of the recent talk about regional and bilateral climate agreements¹²¹ and carbon clubs,¹²² there is a sense that states continue to wait for the UNFCCC COP to establish a new

118. Kyoto Protocol to the United Nations Framework Convention on Climate Change, Dec. 11, 1997, 2303 U.N.T.S. 162 [hereinafter Kyoto Protocol], available at <http://unfccc.int/resource/docs/convkp/kpeng.pdf>.

119. Or, legal outcomes, as the case may be. While the 1990 U.N. General Assembly resolution that launched the U.N. climate change negotiations and, ultimately, culminated in the adoption of the UNFCCC called for “a framework *convention* on climate change, and other related instruments, containing appropriate *commitments* for action to combat climate change and its adverse effects,” the more recent Durban Platform calls for a more generalized process to develop a “protocol, another legal instrument or a legal outcome,” and it entirely omits any language about commitments. *Protection of Global Climate for Present and Future Generations of Mankind*, G.A. Res. 45/212, U.N. Doc. A/RES/45/212 (Dec. 21, 1990), available at <http://www.un.org/documents/ga/res/45/a45r212.htm>; *Establishment of an Ad Hoc Working Group on the Durban Platform for Enhanced Action*, UNFCCC Dec. 1/CP.17, para. 2 (Dec. 11, 2011). In this way, the Durban Platform creates a mandate for some manner of legal agreement, but the mandate is imprecise; the meaning of “legal outcome” is sufficiently ambiguous to offer an escape hatch if, in three years’ time, the parties to the UNFCCC remain divided. As a result, the future of climate change mitigation efforts remains uncertain at best. Cinnamon Carlarne, *Rethinking a Failing Framework*, *supra* note 50, at 18. See also Dan Bodansky, *Evaluating Durban*, *OPINIO JURIS* (Dec. 12, 2011, 6:00 PM), <http://opiniojuris.org/2011/12/12/evaluating-durban/>.

120. See Carlarne, *Rethinking a Failing Framework*, *supra* note 50, at 8-12 (providing an overview of the lead-up to and fall-out from the Copenhagen Climate Change Conference).

121. See, e.g., Environmental Law Institute, *President Obama’s Climate Agenda*, 43 ENVTL. L. REP. NEWS & ANALYSIS 10725, 10726 (2013) (discussing, in part, the President’s commitment to “expand major new and existing international initiatives, including bilateral initiatives with China, India, and other major emitting countries”).

122. See, e.g., Richard B. Stewart, Michael Oppenheimer & Bryce Rudyk, *Building Blocks for Global Climate Protection*, 32 STAN. ENVTL. L.J. 341, 364-74 (discussing the theory and possibilities of carbon/climate clubs).

guiding framework before diving in too deep with their own sub-global efforts to address climate change.¹²³ Despite a continually deepening understanding of the ubiquitous nature of the causes and consequences of climate change,¹²⁴ the notion still persists that until the global community agrees on the way forward, it is risky and politically undesirable to commit to a certain course of action.

It is indisputable that the UNFCCC is an important institution. The UNFCCC defines the parameters for global discourse and provides an essential forum for dialogue and decisionmaking. It is, and always has been, the focal point for the development of principles of international environmental law in the climate change context. Yet, it is not enough. After over twenty years of global negotiations, our understanding of the massive¹²⁵ nature of the problem demands that we reassess how we frame climate change and, in framing climate change, shape political response. It is a problem of and for international environmental law. However, it is and must be treated as much more; it is a problem of human health, security, and well-being and, ultimately, a problem that exposes layers of human and non-human vulnerabilities. It is more than international, more than environmental, more than legal. Each of these dimensions will be considered in turn.

123. There are, of course, important exceptions, including the European Union's climate change strategy and, to a lesser extent, the United States' recent efforts to carve out a climate change strategy under the umbrella of the Clean Air Act. See generally Michael B. Gerrard, *United States Climate Change Law*, in OXFORD HANDBOOK OF INTERNATIONAL CLIMATE CHANGE LAW (forthcoming 2015) (copy on file with author); Sanja Bogojevic, *European Union Climate Change Law: Leadership Ambitions in a Multilateral Regime*, in OXFORD HANDBOOK OF INTERNATIONAL CLIMATE CHANGE LAW (forthcoming 2015) (copy on file with author); Joanne Scott & Lavanya Rajamani, *EU Climate Change Unilateralism*, 23 EUR. J. INT'L L. 469 (2012); Rafael Leal-Arcas, *The Role of the EU, the US, and China in Addressing Climate Change*, in THE EU AND THE POLITICAL ECONOMY OF TRANSATLANTIC RELATIONS 221 (2012); CINNAMON CARLARNE, CLIMATE CHANGE LAW & POLICY: EU & US APPROACHES (2010).

124. See IPCC 2014, *Summary for Policymakers*, in CLIMATE CHANGE 2014: IMPACTS, ADAPTATION, AND VULNERABILITY (March 2014), available at http://ipcc-wg2.gov/AR5/images/uploads/IPCC_WG2AR5_SPM_Approved.pdf.

125. See, e.g., J.B. Ruhl & James Salzman, *Climate Change, Dead Zones, and Massive Problems in the Administrative State: A Guide for Whittling Away*, 98 CALIF. L. REV. 59, 72–80 (2010) (suggesting a framework for looking at complex problems whereby the problem is approached as a “massive problem” that requires more precise definition and is capable of being more effectively—if not fully—addressed through carefully crafted regulatory frameworks).

A. *Climate Change & International Environmental Law: Global Problem, Global Solution?*

Much ink has been spilled analyzing the question of whether international law matters. This Article, for its part, accepts as true that “[t]he theoretical debate over whether international law matters is a stale one.”¹²⁶ Instead of re-visiting the similar and equally stale question of whether international environmental law matters,¹²⁷ this Article probes a more pressing question: can and should international environmental law be relied upon to provide the full foundation upon which global efforts to address climate change are built? The answer is no.¹²⁸

In the early days of the climate change debate, the global community modeled their primary legal vehicle, the UNFCCC, along the lines of a much-heralded multilateral environmental agreement: the Montreal Protocol on Substances that Deplete the Ozone Layer.¹²⁹ The Montreal Protocol, functioning on a system of economy-wide emissions reductions targets and timetables, had shown early promise as an effective system for prompting state parties to adopt domestic measures that demonstrated how they would

126. Gregory Shaffer & Tom Ginsburg, *The Empirical Turn in International Legal Scholarship*, 106 AM. J. INT’L L. 1, 1 (2012) (the authors continue by emphasizing that “[w]hat matters now is the study of the conditions under which international law is formed and has effects. International law is the product of specific forces and factors; it accomplishes its ends under particular conditions.”).

127. I have already stated my agreement with Anton and others that “international environmental law is consequential.” Anton, *supra* note 70, at 212.

128. For a related discussion advocating a bottom-up approach to addressing climate change and trade, see generally Rafael Leal Arcas, *Top-Down and Bottom-Up Approaches in Climate Change and International Trade*, ANNUAL CONFERENCE OF THE EURO-LATIN STUDY NETWORK OF INTEGRATION AND TRADE 23 (2012), available at <http://www10.iadb.org/intal/intalcdi/PE/2012/10379a05.pdf> (suggesting that: “there is no need to have a global solution/universal agreement to this global problem so long as the major GHG emitters reduce their GHG emissions locally. . .”).

129. See, e.g., William Boyd, *Climate Change, Fragmentation, and the Challenges of Global Environmental Law: Elements of a Post-Copenhagen Assemblage*, 32 U. PA. J. INT’L L. 457, 486 (2010) (noting that, “[b]uilding on the Montreal Protocol experience, both the United Nations Framework Convention on Climate Change (“UNFCCC”) and the Kyoto Protocol sought to carry forward the agenda of Earth systems governance, embracing the overarching goal of managing anthropogenic influences on the Earth’s climate system in a comprehensive fashion.”); Robert V. Percival, *Massachusetts v. EPA: Escaping the Common Law’s Growing Shadow*, 2007 SUP. CT. REV. 111, 153 (2007) (suggesting that: “[f]ollowing the model of the successful Montreal Protocol on Substances that Deplete the Ozone Layer, 154 nations at the Rio “Earth Summit” in 1992 signed the United Nations Framework Convention on Climate Change (UNFCCC). The UNFCCC endorsed the principle of controlling emissions of greenhouse gases to prevent harm to the global environment, but it did not establish specific numeric limits or timetables for reducing emissions.”).

achieve legally mandated emissions reductions over a set period of time.¹³⁰ The ‘targets and timetables’ approach ostensibly created a structure that reflected both the fact that ozone depletion was a problem of the global commons that required collective action, and that the differences between developing and developed countries must be accommodated in various ways.

Given the similarities between the ozone depletion problem and the climate change problem and, in particular, the fact that they were both global collective action problems,¹³¹ it is not surprising that early discussion about climate change held the Montreal Protocol up as a model for efforts within the climate context. As late as 1997, when the parties to the UNFCCC negotiated the Kyoto Protocol, the global community still held out hope that some version of an internationally-defined emissions reductions ‘targets and timetables’ approach could mobilize states into adopting the types of national policies necessary to address the problem.

But the differences between the climate and ozone problems exceed the similarities. In particular, differences in the ease with which the offending substances can be eliminated and the economic incentives for doing so vary to such a degree as to render any type of comparative analysis impractical. As Stewart et al. note, while “[g]lobal atmospheric ozone depletion provides an environmental example of a situation in which it was in the self-interest of major jurisdictions to unilaterally take action that would provide global benefits,” “[m]ost developed country governments have concluded that the discernible national benefits from unilateral action to mitigate climate change are unlikely to outweigh the national costs over a politically relevant timeframe, notwithstanding the fact that the long-term benefits appear to be large.”¹³²

130. See, e.g., Daniel Bodansky, *A Tale of Two Architectures: The Once and Future U.N. Climate Change Regime*, 43 ARIZ. ST. L.J. 697, 700 (2011) (commenting that “[g]iven the Montreal Protocol’s perceived success, many not surprisingly viewed it as a model for the climate change issue and proposed using the same regulatory approach—that is, internationally negotiated, economy-wide targets and timetables.”).

131. See, e.g., Lisa Schenck, *Climate Change “Crisis” – Struggling for Worldwide Collective Action*, 19 COLO. J. INT’L ENVTL. L. & POL’Y 319, 334-45 (2008) (suggesting that “cooperation is required to effectively address this threat; however the climate crisis represents a classic collective action problem in response to overexploitation of a global commons.”).

132. See, e.g., Stewart, Oppenheimer, and Rudyk, *supra* note 122, at 349-51 (noting more fully that “[g]lobal atmospheric ozone depletion provides an environmental example of a situation in which it was in the self-interest of major jurisdictions to unilaterally take action that would provide global benefits,” due to the costs associated with related human health problems and the relative containability of the costs of achieving the necessary reductions.” In other words, the cost benefit analysis supported reducing ozone depleting substances. In contrast, the authors note that “[t]his scenario. . . is not viable in the climate case.” In other words, the cost-benefit analysis is more complex and does not clearly lean towards early or

If it had been the case, as with the Montreal Protocol, that a system of international environmental law could be crafted in such a way as to effectively incentivize and facilitate widespread state support and correspondingly high levels of state action, then we could continue to treat climate change as primarily a problem of and for international environmental law. But this is not the case. Climate change differs from ozone depletion and from other issues around which we have structured functional international environmental law regimes.¹³³ It is unlikely that the parties to the UNFCCC representing, as they do, every UN Member State—will be able to craft legal infrastructure that serves as the foundation upon which we build a global solution to climate change that consists of carefully hewn state-based emissions reduction systems.

This vision precedes and is outdated by what we have learned during twenty plus years of international climate negotiations. Thus, in 2011, when the parties to the UNFCCC tasked the Working Group on the Durban Platform for Enhanced Action—with the task of “develop[ing] a protocol, another legal instrument or a legal outcome under the Convention applicable to all Parties”¹³⁴ no later than 2015 in order for that agreement to come into effect and begin to be implemented in 2020,¹³⁵ the task seemed daunting and unlikely to produce the type of legally binding agreement that the global community might have envisioned in 1992, 1997, or even up until 2009. And, despite its emphasis on deadlines and legal instruments, the ambiguous language of the Durban Platform reflects the changing nature of the legal process and changing expectations, calling as it does for a generalized process to develop a “protocol, another legal instrument or a legal outcome,”¹³⁶ and omitting any language about legally binding commitments. The meaning of “legal outcome” is sufficiently ambiguous to offer an escape hatch if, in 2015, the parties to the UNFCCC remain unable to achieve consensus on this best way forward.¹³⁷

aggressive efforts to reduce greenhouse gas emissions economy-wide. As they suggest, “[m]ost developed country governments have concluded that the discernible national benefits from unilateral action to mitigate climate change are unlikely to outweigh the national costs over a politically relevant timeframe, notwithstanding the fact that the long-term benefits appear to be large.”).

133. Climate change is similar to global biodiversity protection in this regard.

134. U. N. Framework Convention on Climate Change, Nov. 28-Dec. 11, 2011, *Establishment of an Ad Hoc Working Group on the Durban Platform for Enhanced Action*, ¶ 2, CP.17/2011/L.10 (Dec. 11, 2011).

135. *Id.* at ¶ 4.

136. *Id.* at ¶ 2.

137. See Cinnamon Carlarne, *The Future of the UNFCCC: Adaptation and Institutional Rebirth for the International Climate Convention 19-20* (Ctr. for Interdisc. L. & Pol’y Stud. at

With this constantly evolving mandate and an increasing sense of urgency tinted with desperation, the parties to the UNFCCC still plow forward with negotiations. While these negotiations may not produce, at least in the short-term, a legal instrument that meets the vision that the global community had in mind during the early years of the negotiations, what these negotiations do contribute is an increasingly sophisticated knowledge base around climate change. This knowledge—knowledge about the nuances of the problem, about the success and failure of different institutional instruments, and about the different needs and interests of the various stakeholders—is invaluable.¹³⁸

These contributions are vital, but they often lack legal character and, as such, they may not be thought of as part of the system of international climate change law. Yet, as will be discussed *infra*, the importance of the programs and experiences that have emerged from over twenty years of UNFCCC activity exemplify the need for a more expansive understanding of the role of international legal institutions in this (and other) contexts.

For now, accepting as true that the UNFCCC is a vital legal institution—but one that we cannot expect to lay a comprehensive foundation upon which to build in the near term—the question that follows is: what comes next? As a starting point, the international forum must be contextualized more centrally within the world in which it exists; a world where state economies are driven by energy, where energy needs are seen as intricately linked with economic growth and well-being, and where efforts to address climate change through mitigation measures are inextricably linked to energy policy choices. Domestic energy policy shapes perceptions of climate change and willingness to support specific climate policies. One of the primary reasons that key state actors do not find it to be in their self-interest to unilaterally take action to mitigate climate change is because of the difficulty and potential economic disruption that would characterize any effort to modify the existing energy infrastructure, in developed countries. In developing countries—especially within the rapidly developing economies—similar concerns prevail but here the focus is on the negative implica-

the Mortiz Coll. of Law, Working Paper No. 172, 2012) (providing a more detailed discussion of the context surrounding the negotiations for the Durban Platform).

138. This includes, but is not limited to, instruments ranging from market based mitigation mechanisms, to methods for facilitating technology transfer, to evolving programs for reducing emissions from the forestry sector, to tools for assessing and planning for climate vulnerability, to the recent creation of the Warsaw International Mechanism for Loss and Damage Associated with Climate Change Impacts. See generally U. N. Framework Convention on Climate Change, Nov. 11-23, 2011, *Warsaw International Mechanism for Loss and Damage Associated with Climate Change Impacts*, 6-8 CP.19/2013/10/Add.1 (Jan. 31, 2014).

tions for economic growth associated with slowing the development of energy infrastructure (largely fossil fuel infrastructure).

Domestic (and global) energy policy, thus, sits at the center of the climate change debate. Part of moving towards a collective agreement is discovering what types of policies will be necessary to transform the energy infrastructure of different types of economies and, in key part, how to decarbonize these economies. At this point, there is no evidence to suggest that even the most advanced economies have a workable blueprint for how to achieve this result at an economy-wide scale within an appropriate timeframe.¹³⁹ Until states understand the pathways to decarbonizing their economies, it does not make sense to spend time arguing about how to set one ultimate global goal or, equally, how to divide up that goal.

What is clear is that, almost across the board, the short-term costs of efforts to decarbonize are seen as dwarfing the perceived long-term benefits, as significant as they might be. Yet, without far-reaching changes to domestic energy policies worldwide, global efforts to mitigate climate change will fail.¹⁴⁰ As one of the co-chairs for Working Group II of the IPCC Fifth Assessment Report recently posited, we will instead have to refocus our energies on managing¹⁴¹ and, ultimately, surviving climate change.¹⁴²

This is not an ideal approach. Efforts to manage climate change are already integral to climate planning—and necessarily becoming more so—but the mitigation side cannot be neglected. As the IPCC warns in its Fifth Assessment Report:

[D]elaying mitigation efforts beyond those in place today through 2030 is estimated to substantially increase the difficulty of the transition to low longer-term emissions levels and narrow the range of options consistent with maintaining temperature change below 2°C relative to pre-industrial levels (high confidence).¹⁴³

139. See *infra* Section IV(B)(iii) (discussing the continuing divide between environmental law and energy law).

140. The possibility for this scenario is why there is increasing research and debate around the perils and possibilities of geoengineering or, more specifically, solar radiation management and carbon sequestration techniques. See, e.g., Burns & Strauss, *supra* note 88; Scott, *supra* note 80; Carlarne, *Arctic Dreams and Geoengineering Wishes*, *supra* note 88.

141. *Climate Change: We Can Adapt, Says IPCC*, FORBES (March 31, 2014), available at <http://www.forbes.com/sites/paulrogers/2014/03/31/climate-change-is-real-but-its-not-the-end-of-the-world-says-ipcc/>.

142. See, e.g., Uri Friedman & Svati Kristen Narula, *The UN's New Focus: Surviving, Not Stopping, Climate Change*, THE ATLANTIC, Apr. 1, 2014, available at <http://www.theatlantic.com/international/archive/2014/04/the-uns-new-focus-surviving-not-stopping-climate-change/359929/>.

143. IPCC 2014, *supra* note 124, at 13.

To accept massive climate change as inevitable or to allow the costs of responding to climate change to accumulate exponentially because our early efforts to develop a centralized approach based on pre-existing legal structures have been ineffective is to let ourselves off too easily. To accept this approach would be to the detriment of all. Freeing the mitigation debate from a framing that requires it to begin with international environmental law in a formulaic way, makes it possible to move past a vision that has at its center a centralized, consensus-based solution as an essential predecessor to action. It also allows the parties to the UNFCCC to think more creatively ways moving forward.¹⁴⁴

As an alternative vision, for example, imagine the gradual construction of a system more akin to a Roman aqueduct, with multiple arches joining together to span a great distance. It is difficult and time consuming to construct; it relies on the integrity of each arch to hold up the larger system; ultimately, it must piece together as a whole system. In the climate context, each arch represents a domestic or regional climate change program, tailored according to domestic energy, environmental, economic, and social politics. In the beginning, the arches are constructed at different paces using different materials. During the building process many mistakes will be made and building plans will change—sometimes halting indefinitely or requiring some dismantling.¹⁴⁵ But through these focused processes, the builders can pay attention to detail; they can experiment with different combinations of regulatory strategies, incentive structures, and political engagement to improve understanding of the demand and supply-side barriers to reducing greenhouse gas emissions. Through this experimentation, which will doubtlessly be more aggressive in some contexts than in others, policy-makers can begin to cultivate more sophisticated strategies for bringing about larger shifts in domestic energy portfolios.

Just as deciding to refocus energies on managing climate change at the expense of mitigation is not ideal, this vision is similarly imperfect. It involves overcoming very real political impediments to unilateral action. As Richard Lazarus has described:

The science of climate change creates a series of forbidding law-making obstacles that contribute to climate change's wickedness as a public policy problem. But one reason that those obstacles are so potentially overwhelming is because they work in tandem with

144. See generally Carlarne, *Rethinking a Failing Framework*, *supra* note 50.

145. E.g., the repeal of the Australian carbon tax on July 1, 2014. See AUSTRALIAN GOVERNMENT, DEPARTMENT OF THE ENVIRONMENT, REPEAL OF THE CARBON TAX, <http://www.environment.gov.au/climate-change/repealing-carbon-tax> (last visited Oct. 9, 2014).

human nature. Whether as a result of hard- or soft-wiring, human beings as a species tend to think in certain ways. As described by the field of cognitive psychology, we tend to favor some outcomes over others, are able to grasp some kinds of concepts more readily than others, and use a series of mental shortcuts or “heuristics” in making decisions. As applied to climate change, these cognitive tendencies and limitations produce a “massive social trap.”¹⁴⁶

In other words, the inability to discreetly visualize climate change, and the disconnect between cause and effect and temporal challenges creates layers of political complexity around the problem. This complexity makes it difficult for policymakers to convince constituencies of the need for immediate actions, especially when those actions entail short-term costs for long-term benefits. Compounding this is the collective action nature of the problem. As the IPCC describes it:

Climate change has the characteristics of a collective action problem at the global scale, because most greenhouse gases (GHG) accumulate over time and mix globally, and emissions by any agent (e.g., individual, community, company, country) affect other agents.¹⁴⁷

There has been considerable scholarly discussion about the collective action nature of climate change and concomitant discussions about the tragedy of the commons,¹⁴⁸ prisoner’s dilemmas,¹⁴⁹ and free rider problems,¹⁵⁰

146. Richard Lazarus, *Super Wicked Problems and Climate Change: Restraining the Present to Liberate the Future*, 94 CORNELL L. REV. 1153, 1173-74 (2009) (citing Jeffrey J. Rachlinsk, *The Psychology of Global Climate Change*, 2000 U. ILL. L. REV. 299, 300 (2000)). See also Robert Costanza, *Social Traps and Environmental Policy*, 37 BIOSCIENCE 407, 408 (1987).

147. IPCC 2014, *supra* note 124.

148. See, e.g., Kristen H. Engel & Scott R. Saleska, *Subglobal Regulation of the Global Commons: The Case of Climate Change*, 32 ECOLOGY L.Q. 183, 190-209 (2005).

149. See, e.g., Schenck, *supra* note 131, at 345-59. Cf. generally ROBERT AXELROD, *THE EVOLUTION OF COOPERATION* (1984) (offering alternative theory to the classic prisoner dilemma framing within the context of international relations).

150. See, e.g., Dieter Helm, *Climate-Change Policy: Why Has So Little Been Achieved?*, 24 OXFORD REV. ECON. POLY 211, 219 (2008) (observing that “the allocation of responsibility for the existing stock of carbon in the atmosphere (which developing countries point out was put there by the industrialized countries) is complex; carbon emissions per head are low in those countries most rapidly increasing their emissions; some countries (and, particularly, some countries’ political elites) may actually benefit from climate change, and generally the effects vary greatly between countries; there are powerful - multidimensional - free-rider incentives; the measurement of emissions (including, to list just a few, rain-forest depletion, soil erosion, methane from permafrost melting, aviation and shipping, agriculture, and ocean and other sink depletion) is at best weak; and there are, at present, no serious enforcement mechanisms.”). See also Robert N. Stavins, *Beyond Kyoto: An Economic Perspective on Cli-*

and how these social traps impede sub-global efforts to develop climate mitigation strategies.

The existence of collective social dilemmas¹⁵¹ motivates the demands for a centralized solution to climate change. However, even in the absence of a centralized solution, motivations are changing. As understanding of the impacts of climate change becomes more widespread and as civil society concerns over the short-term and long-term impacts of climate change deepen, national and sub-national efforts to address climate change become more feasible. This is true in developed countries, where questions of national security, increasing storm intensity, the availability of insurance, and human health are contributing to shifting perceptions, and in developing countries, where high levels of vulnerability to climate change are prompting increasing calls for action. The vast majority of the World Bank's middle-income economies—including the rapidly developing economies of China, India, and Brazil—exhibit a high level of vulnerability to climate change in the medium term. This means that these countries are vulnerable to climate change not just one-hundred years from now but also over the next decades as a result of climate-related threats to food and water security, among others.

As the early impacts of climate change become increasingly visible, domestic policies are showing signs of shifting.¹⁵² In the United States, for example, which has been a key hold-out country, sub-national efforts to address climate change have proliferated¹⁵³ and, together with an active civil

mate Change Policy, Speech at the Institute of International and European Affairs (Sept. 16, 2011) (transcript), *available at* <http://belfercenter.ksg.harvard.edu/files/stavins-presentation-on-beyond-kyoto-for-dublin.pdf>.

151. *See generally* THE SOCIAL AND BEHAVIOURAL ASPECTS OF CLIMATE CHANGE: LINKING VULNERABILITY, ADAPTATION AND MITIGATION (Willem Jozef, Meine Martens & Chiung Ting Chang eds., 2010).

152. *See, e.g.*, White House Facts on U.S.-China Energy Agreement (Nov. 11, 2014), *available at* <http://iipdigital.usembassy.gov/st/english/texttrans/2014/11/20141112310785.html#axzz3JLWUBWJZ> (discussing recent developments in efforts on the part of the United States' and Chinese governments to work cooperatively and at home to address climate change).

153. *See, e.g.*, Katherine A. Trisolini, *All Hands on Deck: Governments and the Potential for BiDirectional Climate Change Regulation*, 62 STAN. L. REV. 669 (2010); Rachel Brewster, *Stepping Stone or Stumbling Block: Incrementalism and National Climate Change Legislation*, 28 YALE L. & POLY REV. 245 (2010); Cinnamon Carlarne, *Notes from a Climate Change Pressure-Cooker: Sub-Federal Attempts at Transformation Meet National Resistance in the USA*, 40 CONN. L. REV. 1351 (2008); Jonathan B. Wiener, *Think Globally, Act Globally: The Limits of Local Climate Change Policies*, 155 U. PAL. L. REV. 1961, 1961-62 (2007); Kirsten Engel, *State and Local Climate Change Initiatives: What Is Motivating State and Local Governments to Address a Global Problem and What Does This Say About Federalism and Environmental Law?*, 38 URB. L. 1015, 1022 (2006).

society-led litigation campaign,¹⁵⁴ have prompted the development of an increasingly complex—but still evolving—regulatory regime. As the United States' experience suggests, even in countries that staunchly opposed a legally binding international agreement, when the debate is contained to a manageable forum and contextualized within a framework that highlights constituent interests and needs, progress is possible.¹⁵⁵

In common with the experiences of other nations worldwide,¹⁵⁶ the ongoing experience of the United States demonstrates the amount of effort and the degree of experimentation necessary to get workable regimes off the ground. These hesitantly and haphazardly emerging regimes are not ideal ways to deal with a pervasive global problem. In the absence of an optimal solution, however, this type of regulatory development permits the type of experimentation that enables slow and steady progress, while at the same time offering hope for increasingly ambitious strategies and revolutionary technological breakthroughs. In the end, with climate change mitigation, there is no ideal approach. But, freeing the debate from the notion that a new conventional international framework is a prerequisite for more deliberate national or regional action is a necessary step towards allowing, if not compelling less hesitant mitigation efforts at the sub-global level.

This shift does not mean that UNFCCC and other international institutions should or will play lesser roles. Quite the contrary; international institutions have an indispensable role to play in facilitating the construction of sub-global policies. Ultimately, of course, the UNFCCC provides the guiding principles and institutional assistance necessary to connect the arches of sub-global climate policy together to create a system that is joined-up, even if only roughly so.

The politics of climate change—like climate change itself—might change gradually or even abruptly to bring about a dramatic reordering of national priorities.¹⁵⁷ Until that time, framing climate change as a problem

154. For an overview, see David L. Markell & J.B. Ruhl, *An Empirical Assessment of Climate Change in the Courts: A New Jurisprudence or Business as Usual?*, 64 *FLA L. REV.* 15 (2012).

155. As Engel and Saleski noted back in 2005, “unilateral subglobal regulation is a viable, if not optimal, approach to global commons environmental problems.” Engel & Saleska, *supra* note 148, at 232. See also Elinor Ostrom, *A Polycentric Approach for Coping with Climate Change* 39 (World Bank, Policy Research Working Paper No. 5095 2009) (pointing out that with a complex challenge such as climate change, there is no “optimal” solution).

156. See, e.g., Daniel A. Farber, *The Challenge of Climate Change Adaptation: Learning from National Planning Efforts in Britain, China and the USA*, 23 *J. ENVTL. L.* 359 (2011); CINNAMON CARLARNE, *CLIMATE CHANGE LAW AND POLICY: EU AND US APPROACHES* (2010).

157. This could happen because of the increasing visibility and severity of the impacts of climate change or, for example, because of changing perceptions of the costs and benefits of responding to climate change as a result of, for example, new technologies or shifting politi-

primarily of and for international environmental law creates a perpetually available reason to delay sub-global efforts. At this point in time, the global community is not capable of using tools of international environmental law to lay a solid foundation. It may one day be. But, until then, it is essential to move past a framing that posits that a regime of *international* environmental law is a necessary prerequisite to concerted sub-global action.

B. *Climate Change & International Environmental Law: Environmental Problem, Environmental Solution?*¹⁵⁸

Liberating the debate, at least for the moment, from a vision that requires international consensus as a necessary precondition for moving forward with sub-global efforts to craft mitigation strategies, frees us to explore the utility of the *environmental* piece of the international environmental law framing.

Climate change is inherently interdisciplinary. It is an issue that cannot be understood, much less addressed, without drawing upon experts from across a wide range of disciplines, including natural and social scientists, lawyers, engineers, and ethicists. In addition to straddling a wide range of disciplines, climate change also straddles seemingly distinct fields of law. More than any other nominally “environmental” issue, climate change demands a rethinking of the adequacy of working within the conventional paradigm for addressing environmental problems.¹⁵⁹

1. Challenging the Conventional Climate Paradigm

There is widespread recognition that climate change impacts human health and well-being and that efforts to address climate change implicate questions of economics, equity, security, and human health and well-being. As previously discussed, the IPCC’s 5AR highlights these impacts and relationships in no uncertain terms. Beyond the IPCC, there is ample debate (and scholarship) exploring the ways in which climate change intersects with long-standing legal and political dilemmas, as well as giving rise to new legal and political questions. Efforts abound to identify the ways in which climate change aggravates and is aggravated by decisions made

cal alliances. See, e.g., White House Facts on U.S.-China Energy Agreement, *supra* note 152 (discussing U.S. – Chinese collaboration); *U.S.-China Climate Surprise – a Coal Plant that Stores CO2 and Makes Fresh Water*, ENERGYWIRE, Nov. 17, 2014 (discussing a proposed new technology that, if successful, could change perceptions of the costs and benefits of reducing greenhouse gas emissions).

158. John Copeland Nagle, *Climate Exceptionalism*, 40 ENVTL. L. 53 (2010).

159. Ivana Zofko, *International Law-Making for the Environment: A Question of Effectiveness*, in INTERNATIONAL ENVIRONMENTAL LAW-MAKING AND DIPLOMACY REVIEW (Marko Berglund ed., 2006).

outside of the parameters (often far beyond the outer reach) of the climate change regime or international environmental law, more broadly. From efforts to reframe climate change as a security issue¹⁶⁰ or as an issue of fundamental human rights,¹⁶¹ to efforts to utilize the links between climate change and cultural heritage law,¹⁶² the law of sea,¹⁶³ and intellectual property law,¹⁶⁴ there is little question that these linkages exist, that they matter, and that there is political recognition of these connections.

Nevertheless, early efforts to broaden the debate about climate change by inserting climate change into prominent international forums such as the UN Security Council, the Inter-American Commission on Human Rights¹⁶⁵, and the Law of the Sea largely came to naught. In 2007, for

160. See, e.g., Carlarne, *Risky Business*, *supra* note 44. See also Press Release, Secretariat, UN Sec'y-Gen. Announces 'Nairobi Framework' to Help Developing Countries Participate in the Kyoto Protocol, U.N. Press Release, Nov. 15, 2001, available at http://unfccc.int/files/press/news_room/press_releases_and_advisories/application/pdf/061115_cop12_pressrel_1.pdf (wherein then U.N. Secretary-General Kofi Annan described climate change as a threat to global security, saying that "[g]lobal climate change must take its place alongside the threats of conflict, poverty and the proliferation of deadly weapons that have traditionally monopolized first-order political attention.").

161. See, e.g., ERIC POSNER & DAVID WEISBACH, *CLIMATE CHANGE JUSTICE* (2010); Randall S. Abate & Elizabeth Ann Kronk, *Commonality Among Unique Indigenous Communities: An Introduction to Climate Change and its Impacts on Indigenous Peoples*, 26 TUL. ENVTL. L.J. 179, 193-94 (2013); Marilyn Averill, *Linking Climate Litigation and Human Rights*, 18 REV. OF EUR. COMMUNITY & INT'L ENVTL. L. 139 (2009); Depledge & Carlarne, *supra* note 45, at 237-38 (2007) (providing an overview of attempts by the Inuit Circumpolar Conference to bring before the Inter-American Commission on Human Rights allegations of human rights violations against the United States for both its contribution to climate change and its failure to alleviate climate change); Eric A. Posner, *Climate Change and International Human Rights Litigation: A Critical Appraisal*, 155 U. PA. L. REV. 1925 (2007).

162. See, e.g., William C.G. Burns, *Belt and Suspenders?: The World Heritage Convention's Role in Confronting Climate Change*, 17 SOUTHEASTERN ENVTL. L.J. 359 (2009); Cinnamon Carlarne, *Climate Change, Cultural Heritage & the Oceans: Rethinking Regulatory Approaches to Climate Change*, 17 SOUTHEASTERN ENVTL. L.J. 271, 290-93 (2009).

163. See e.g., William C.G. Burns, *Potential Causes of Action for Climate Change Damages in International Fora: The Law of the Sea*, 2 INT'L J. SUSTAINABLE DEV. L. & POL'Y 27 (2006); William C.G. Burns, *Potential Causes of Action for Climate Change Impacts Under the United Nations Fish Stocks Agreement*, 7 INT'L J. SUSTAINABLE DEV. L. & POL'Y 34 (2007); William C.G. Burns, *The Exigencies that Drive Potential Causes of Action for Climate Change Damages at the International Level*, 98 AM. SOC'Y INT'L L. PROC. 223, 227 (2004); Meinhard Doelle, *Climate Change and the Use of the Dispute Settlement Regime of the Law of the Sea Convention*, 37 J. OCEAN DEV. & INT'L L. 319 (2006); Lucy Wiggins, *Existing Legal Mechanisms to Address Oceanic Impacts from Climate Change*, 7 INT'L J. SUSTAINABLE DEV. L. & POL'Y 22 (2007).

164. See, e.g., Joshua D. Sarnoff, *The Patent System and Climate Change*, 16 VA. J.L. & TECH. 301 (2011); IN THE WILDS OF CLIMATE LAW 84, 87 (Rosemary Lyster ed., 2010).

165. Hari Osofsky, *Inuit Petition as a Bridge? Beyond Dialectics of Climate Change and Indigenous Peoples' Rights*, 31 AM. INDIAN L. REV. 675 (2007) (exploring the challenges posed to the Inuit by rapid climate change and the legal implications of the Inuit Petition to the

example, in one of the most prominent efforts to elevate the discussion around climate change, then President of the Security Council, UK Foreign Secretary Margaret Beckett, initiated¹⁶⁶ the Security Council's first ever debate on the impact of climate change on peace and security.¹⁶⁷ This debate took place in the wake of the Kyoto Protocol entering into force (February 2005) and prior to the disastrous Copenhagen Climate Conference (2009) in what was a pivotal time for global climate politics; a time when there was still some hope of lifting the debate about climate change out of the quagmire of collective-action politics that was increasingly hampering UNFCCC negotiations. The Security Council debate, however, revealed the extent to which member states disagreed over the appropriateness of framing climate change as an issue of peace and security.

China and Pakistan, speaking on behalf of the Group of 77, resisted efforts to classify climate change as a peace and security matter that fit within the ambit of the Security Council. Instead, they insisted that the climate change debate belonged in the Economic and Social Council and in the General Assembly. In contrast, Papua New Guinea declared that the impact of climate change on small islands was "no less threatening than the dangers guns and bombs posed to large nations."¹⁶⁸ Echoing Papua New Guinea's comments, UN Secretary-General, Ban Ki-moon, commented that "[w]ar had too often been the means to secure possession of scarce resources" and suggested to the member states that the Security Council has a role to play in addressing an issue that has "implications for peace and security."¹⁶⁹ In the end, the Security Council debate did not produce any discernible outcomes except, perhaps, to solidify the climate change-security linkage as a point of varying concern among the member states.

Inter-American Human Rights Commission alleging that acts and omissions on the part of the United States violated Inuit human rights); Sheila Watt-Cloutier, Testimony before the Inter-American Commission on Human Rights (March 1, 2007) (transcript) [hereinafter, Watt-Cloutier Testimony], available at http://www.ciel.org/Publications/IACHR_WC_Mar07.pdf; CTR FOR INT'L ENVTL. L., INUIT FILE PETITION WITH INTER-AMERICAN COMMISSION ON HUMAN RIGHTS, CLAIMING GLOBAL WARMING CAUSED BY UNITED STATES IS DESTROYING THEIR CULTURE AND LIVELIHOODS (2005) [hereinafter, INUIT PETITION], available at http://www.ciel.org/Publications/ICC_Petition_7Dec05.pdf.

166. The debate was prompted by a request from Permanent Representative of the United Kingdom of Great Britain and Northern Ireland to the United Nations. Letter dated Apr. 5, 2007, *supra* note 54.

167. Press Release, Security Council, Security Council Holds First Ever Debate on the Impact of Climate Change on Peace, Security, Hearing over 50 Speakers, U.N. Press Release SC/9000 (Apr. 17, 2007), available at <http://www.un.org/News/Press/docs/2007/sc9000.doc.htm>.

168. *Id.*

169. *Id.*

Despite the absence of consensus in the Security Council, as understanding of climate change grows, climate change figures more and more prominently on global and national security agendas. In 2012, for example, the UN Secretary-General's High-level Panel on Global Sustainability declared that climate change poses "new challenges to international peace and security."¹⁷⁰ More recently, U.S. Navy Admiral, Samuel J. Locklear III, asserted that political upheaval related to climate change "is probably the most likely thing that is going to happen . . . that will cripple the security environment, probably more likely than the other scenarios we all often talk about. . . . You have the real potential here in the not-too-distant future of nations displaced by rising sea level."¹⁷¹

As time passes, climate-security linkages are receiving increasing attention. Behind the scenes, military forces are at the forefront of thinking through the types of security risks that climate change poses and the types of military responses that are necessary to prepare to combat those risks.¹⁷² Yet, the alignment of climate change with security risks has done little to mainstream the climate conversation. The same can be said for efforts to frame climate change as a human rights issue (most prominently before the Inter-American Commission on Human Rights¹⁷³).

The conventional paradigm, thus, remains largely intact.

170. U. N. Sec'y-Gen.'s High-Level Panel on Global Sustainability, *Resilient People, Resilient Planet: A Future Worth Choosing*, at 20, U.N. Sales No. E.12.I.2 (2012).

171. Bryan Bender, *Chief of US Pacific Forces Calls Climate Biggest Worry*, BOSTON GLOBE, March 9, 2013, <http://bostonglobe.com/news/nation/2013/03/09/admiral-samuel-locklear-commander-pacific-forces-warns-that-climate-change-top-threat/BHdPVCLrWEM-xRe9IXJZcHL/story.html>. Similarly, in a recently released report, a group of retired military leaders cautioned that "[i]n many areas, the projected impacts of climate change will be more than threat multipliers; they will serve as catalysts for instability and conflict." CNA MILITARY ADVISORY BOARD, NATIONAL SECURITY AND THE ACCELERATING RISKS OF CLIMATE CHANGE 2 (2014), available at http://www.cna.org/sites/default/files/MAB_2014.pdf.

172. See, e.g., NIC Publications, OFFICE OF THE DIRECTOR OF NATIONAL INTELLIGENCE, <http://www.dni.gov/index.php/about/organization/national-intelligence-council-nic-publications> (last visited Oct. 15, 2014) (including a list of NIC commissioned reports on the effects of climate change on different parts of the world, including India, China, Russia, North Africa, Mexico and the Caribbean, and Southeast Asia and the Pacific Island States). See also John M. Broder, *Climate Change Report Outlines Perils for U.S. Military*, N.Y. TIMES, Nov. 9, 2012, http://www.nytimes.com/2012/11/10/science/earth/climate-change-report-outlines-perils-for-us-military.html?_r=0; Joshua Zaffos, *U.S. Military Forges Ahead with Plans to Combat Climate Change*, SCIENTIFIC AMERICAN, Apr. 2, 2012, available at <http://www.scientificamerican.com/article/us-military-forges-ahead-with-plans-to-combat-climate-change/>.

173. See Osofsky, *supra* note 165; Watt-Cloutier Testimony, *supra* note 165; *Inuit Petition*, *supra* note 165.

2. Working Within the Conventional Paradigm

Having failed to crack the conventional paradigm, legal debates about climate change continue to frame and approach the problem in traditional environmental terms. In the international context, this means that global efforts to mitigate climate change focus on agreeing upon a basic emissions reductions model, akin to the Montreal Protocol (as discussed *infra*). This model is also not dissimilar to the basic way in which the U.S. Clean Air Act (CAA) functions. The CAA tasks the U.S. Environmental Protection Agency with establishing national ambient air quality standards but then largely leaves it up to the states to decide how they are going to achieve those air quality standards.¹⁷⁴ Similarly, at the international level, the parties to the UNFCCC focus on trying to achieve an overarching global goal that will serve as the basis for devising more precise commitments on the part of each state, but with the state retaining final and near complete authority over how it chooses to achieve those goals.

Similarly, at the sub-global level, states largely continue to employ conventional pollution paradigms as the basis for emergent climate change mitigation efforts. This is true in the United States, for example, where the CAA is the primary federal vehicle for addressing climate change. This framing persists despite mounting challenges to the adequacy of this approach, including claims that the paradigm is “profoundly inadequate for understanding and dealing with global warming.”¹⁷⁵

In his 2010 piece, *Climate Exceptionalism*, John Copeland Nagle offers a thoughtful analysis of the pollution paradigm and of the critiques to which it has been subject. Nagle reminds us that while “[c]limate change presents a particular challenge because of the global nature of the problem . . . it is also a typical pollution problem that raises familiar questions of tolerable harms, proof of causation, and the appropriate balance between legal mandates and voluntary actions.”¹⁷⁶ In highlighting the ways in which climate change is similar to a typical pollution problem, Nagle effectively advocates that we embrace an inclusive rather than exclusive approach to addressing climate change. That is, he cautions against the idea that we must choose between

174. There are, of course, key differences. Under the CAA, all states are subject to the same ambient air quality standards whereas at the international level, the standards (i.e., emissions reductions) that each state is subject to vary. 85 U.S.C. § 7409 (2014). Further, under the CAA, if a state fails to submit an implementation plan or the implementation plan is inadequate, the EPA is required to step in and take over implementation until the state is approved to do so. *Id.* § 7410.

175. Nagle, *supra* note 158, at 75 (quoting TED NORDHAUS & MICHAEL SHELLENBERGER, *BREAK THROUGH: FROM THE DEATH OF ENVIRONMENTALISM TO THE POLITICS OF POSSIBILITY* 111 (2007)).

176. *Id.* at 88.

using conventional regulatory strategies and alternative approaches on the grounds that it is unlikely that an either or approach premised on traditional regulation or, for example, innovative energy policy will “constitute the elusive silver bullet” to address climate change.¹⁷⁷ After all, even with more conventional pollution problems, “the law employs a combination of prevention, control, toleration, and avoidance to address pollution problems as different as water pollution and noise pollution and violent entertainment.”¹⁷⁸ Why would we expect less in the climate context?

The pollution paradigm, in common with the conventional international environmental law paradigm, however, offers a partial solution at best. It provides scaffolding around which to construct an evolving approach to addressing climate change. But it is too narrow both in how it depicts climate change and in the range of behaviors it can influence.

As discussed,¹⁷⁹ framing climate change as an environmental problem and approaching it within the conventional paradigm is what allowed the global community to coalesce around the issue. Without this initial framing and the resulting global consensus, it is unlikely that our understanding of the physical science of climate change would be as sophisticated as it is, or that the political conversation on climate change—as deficient as it is—would be as far along as it is.

Viewing climate change as a traditional environmental problem that must be solved using a set of traditional tools undoubtedly constrains our response to the problem, but it does not follow that we should abandon wholesale or even mostly the environmental paradigm. We cannot afford to abandon our understanding of climate change as an environmental problem—even as a “typical pollution problem.”¹⁸⁰ And, we cannot abandon our use of environmental law tools to whittle away¹⁸¹ at the climate change problem. To do so would bode disaster. The United States is not alone in building a climate change strategy on the foundations of environmental law and, more specifically, pollution law. If these tools were to be abandoned, the core of these efforts to address climate change would crumble.

Climate change is an environmental problem. This is not at issue. But, it is also a security problem, a human rights problem, a trade problem, an economic problem, a development problem, a public health problem, and, fundamentally, an energy problem. This complexity alone does not render climate change unusual. The legal field is scattered with complex questions

177. *Id.* at 86.

178. *Id.*

179. See discussion *supra* Section III(A).

180. Nagle, *supra* note 158, at 88.

181. See *Massachusetts v. EPA*, 549 U.S. 497, 524 (2007). See also Ruhl & Salzman, *supra* note 125, at 71-79.

that transcend easy classification. Yet, whether law is viewed as concentric circles or disconnected boxes, the disjunctions between areas of law in the climate context pose notable challenges for even the most Herculean of judges,¹⁸² as well as for the many lawyers, academics, and members of civil society who work on the issue. The persistence of these fault lines and the predominance of the conventional framework impede efforts to address a nominally environmental issue that impacts humanity in profound ways.

3. Widening the Frame: Climate Change as an Energy Issue

At a very basic level, climate change needs to be mainstreamed. It needs to be released from a compartmentalized framing. Perhaps the most effective way to begin mainstreaming the debate and diversifying efforts to address climate change is by widening the frame. The best way to do this is to more actively frame climate change as an energy challenge.

Climate change sits at the nexus between energy and environmental law. In the United States, for example, in 2011, carbon dioxide accounted for eighty-four percent of total U.S. greenhouse gas emissions, with ninety-seven percent of those carbon dioxide emissions attributable to energy use.¹⁸³ In the United States, therefore, “the most direct way to reduce future climate change is to reduce emissions from the energy sector by using energy more efficiently and switching to lower carbon energy sources.”¹⁸⁴ Although the percentages vary, the relationship between carbon dioxide emissions and energy use sits at the center of efforts to mitigate climate change across developed and developing countries.

Fundamentally, efforts to mitigate climate change require reducing greenhouse gas emissions. Such reductions require modifying primary energy infrastructures—including both stationary and mobile sources. In cause and consequence, as much as climate change is a pollution problem, it is also an energy problem. Traditionally, questions of energy and environmental law have been addressed in separate forums using distinct systems of law and policy.¹⁸⁵ In most domestic contexts, there are discrete bodies of energy

182. See RONALD DWORKIN, *LAW'S EMPIRE* 250-53 (1986).

183. U.S. Global Change Research Program, *supra* note 32, at 652.

184. U.S. Global Change Research Program, *Third National Climate Assessment Highlights: Responses*, GLOBAL CHANGE (2014), <http://nca2014.globalchange.gov/highlights/report-findings/responses>.

185. See generally Alexander Klass, *Climate Change and the Convergence of Environmental and Energy Law*, 24 *FORDHAM ENVTL. L. REV.* 180 (2013).

law and environmental law.¹⁸⁶ Until recently, the fields of energy and environmental law have been treated as concentric circles where the areas of overlap were minimal or, at least, bounded.

Traditionally, the intersections between environmental law and energy law and policy have been approached at the margins. At the domestic level, in the United States, for example, this occurs through environmental regulation of the air and water emissions from coal-fired power plants.¹⁸⁷ More generally, in the United States, environmental regulations affect extraction, transportation, generation, and disposal actions to significantly different degrees depending on the energy source (e.g., more for coal, less for gas, and even less for oil). Across the different sectors, the energy industry continues to receive significant environmental exemptions and fragmentation both within the energy field and between the energy and environmental fields means that energy decisions continue to be made largely in isolation from larger questions about environmental issues, including climate change.

Similarly, at the international level, international agreements such as the Montreal Protocol influence production methods and incentivize energy efficiency.¹⁸⁸ On occasion, the decisions of key institutions, such as the WTO, address tensions between trade, energy, and environmental concerns.¹⁸⁹ Here, as in the domestic context, however, the decisions are piecemeal and there is no substantive and meaningful engagement between key international energy, environmental, and economic institutions about ways in which to coordinate energy decisions with overarching global climate goals.

186. *Id.*; see also Amy J. Wildermuth, *The Next Step: Integration of Energy Law and Environmental Law*, 31 UTAH ENVTL. L. REV. 369 (2011); Lincoln L. Davies, *Alternative Energy and the Energy-Environment Disconnect*, 46 IDAHO L. REV. 473 (2010).

187. For a comprehensive discussion of the environmental regulatory regime for coal, see Patrick McGinley, *Collateral Damage: Turning a Blind Eye to Environmental and Social Injustice in the Coalfields*, 19 J. ENVTL. & SUSTAINABILITY L. 305 (2013).

188. Donald Kaniaru et al., *Strengthening the Montreal Protocol: Insurance Against Abrupt Climate Change*, 7 SUSTAINABLE DEV. L. & POLY OF AM. U. 3, 5 (2007) (“Past transitions from CFCs to HCFCs and hydrofluorocarbons (“HFCs”) helped drive technological innovation in substitutes, manufacturing processes, and equipment, which in many cases resulted in gains in energy efficiency, reduced leakage, or other technological improvements. To date, about 80 percent of ODSs that would be in use without the Montreal Protocol have been replaced by non-fluorocarbon chemicals, which do not deplete the ozone layer. These substitutes include not-in-kind chemical substitutes and product alternatives (e.g., a roll-on deodorant instead of a spray can), changes to manufacturing processes, conservation measures, and doing without.”).

189. See, e.g., Timothy Meyer, *Energy Subsidies and the World Trade Organization*, 17 ASIL INSIGHTS 22 (2013), available at <http://www.asil.org/insights/volume/17/issue/22/energy-subsidies-and-world-trade-organization>.

The fields remain fragmented and this fragmentation renders efforts to mitigate climate change hollow. The disconnect between climate change and energy is really a disconnect between merely identifying the problem of climate change and actually beginning to experiment with pathways towards mitigating climate change. As the U.S. Third Assessment Report concludes, making inroads into addressing climate change “require[s] substantial decarbonization of the global economy by the end of this century, implying a fundamental transformation of the global energy system.”¹⁹⁰

In the wake of the release of the IPCC’s AR5 and the Third Assessment Report, it is impossible to imagine delinking the climate change debate from energy law and policy. In launching the AR5, the IPCC’s chair, Rajendra Pachauri, advised that: “The high speed mitigation train needs to leave the station very soon, and all of global society will have to get on board.”¹⁹¹ Critically, all of the mitigation pathways considered in the AR5 involve up-scaling of low-carbon energy. In discussing the release of Working Group III’s Report, *Mitigation of Climate Change*, Ottmar Edenhofer, co-chair of the group, confirmed this relationship, insisting that “[t]here needs to be a massive shift away from fossil fuels and investment needs to shift to going 100% clean as fast as possible.”¹⁹² In essence, we must begin mitigating climate change immediately, which means shifting our energy infrastructure quickly and dramatically.

Within this context, even the most advanced economies are still in the early stages of thinking through how to achieve the types of energy shifts that the IPCC and the Third Assessment indicates are necessary to avoid the possibility of increasingly severe climate change impacts. As the Third Assessment emphasizes:

The principal types of national actions that could effect such changes include putting a price on emissions, setting regulations and standards for activities that cause emissions, changing subsidy programs, and direct federal expenditures. Market-based approaches include cap-and-trade programs that establish markets for trading emissions permits, analogous to the Clean Air Act provisions for sulfur dioxide reductions. *None of these price-based measures has been implemented at the national level in the U.S.*¹⁹³

190. U.S. Global Change Research Program, *supra* note 32, at 657.

191. Matt McGrath, *World Must End ‘Dirty’ Fuel Use – UN*, BBC NEWS, Apr. 13, 2014, <http://www.bbc.com/news/science-environment-27008352>.

192. *Id.*

193. U.S. Global Change Research Program, *supra* note 32, at 653 (emphasis added).

Thus, while it is increasingly clear that significant changes in the energy sector are necessary to curb climate change, it is less clear that any major state or regional players know how to achieve those changes in ways that are technologically, economically, and politically feasible.¹⁹⁴

These characteristics render energy policy distinctly ill-suited to be addressed through a centralized, top-down approach—either at the global level or, as the case may be, at the national level. Yet, reform is needed and reform is needed fast. It is beyond the remit of this Article to explore the many and varied ways to begin this reform process and the parallel process of shifting the paradigm in order to approach climate change simultaneously as an environmental and energy law challenge¹⁹⁵—a problem that requires us to delve more deeply into the mechanics of the prevailing economic model. In the context of this Article, with its focus on the limits of international environmental law both to describe and “solve” the climate change problem, it is worth mentioning how more explicitly depicting climate change as an energy challenge might begin to shake up our increasingly stagnant policy efforts at the global level. To do so requires us to start by examining the foundations of the UNFCCC—the primary global climate law institution.

The UNFCCC is a top-heavy international institution that is not only state-centered, but also requires consensus¹⁹⁶ to make critical decisions. Consensus in this context relies on achieving agreement between 195 parties. As climate negotiations have evolved and rifts have deepened, consensus has become difficult to achieve, particularly on substantive questions.

194. Further, as the IPCC emphasizes, “[b]ehaviour, lifestyle and culture have a considerable influence on energy use and associated emissions” Consequently, the changes necessary to bring about energy shifts vary from place to place. *See* IPCC 2014, *supra* note 124, at 21.

195. For an example of such work, *see* JOSEPH P. TOMAIN, *ENDING DIRTY ENERGY POLICY: PRELUDE TO CLIMATE CHANGE* (2011). *See also* Andrew Long, *Complexity in Global Energy-Environment Governance*, MINN. J.L. SCI. & TECH. 58 (forthcoming 2014), available at <http://ssrn.com/abstract=2399936> (noting, in key part, that “[l]iterature since the 2009 UNFCCC negotiations in Copenhagen is beginning to explore alternatives to top-down binding international environmental agreements for catalyzing successful mitigation, but it has yet to coalesce around an analytical framework that can foster synergy and the development of a cohesive body of work identifying and testing viable options that are likely to produce solid policy recommendations. A perspective on climate change informed by an understanding of the global energy system as a complex system has the potential to provide such a framework.”).

196. *See* UNFCCC, *supra* note 10, arts. 7(2)(k) & 15 (dictating that the Conference of the Parties shall “[a]gree upon and adopt, by consensus, rules of procedure and financial rules for itself and for any subsidiary bodies” and that “[t]he Parties shall make every effort to reach agreement on any proposed amendment to the Convention by consensus. If all efforts at consensus have been exhausted, and no agreement reached, the amendment shall as a last resort be adopted by a three-fourths majority vote of the Parties present and voting at the meeting.”).

Despite its rigidity, and because there is no clear competitor institution,¹⁹⁷ the UNFCCC continues to shape the collective climate change agenda.

The UNFCCC's primacy is not set in stone, however. One of the side effects of the fragmentation that characterizes the field of international law is that there are often multiple international institutions that have overlapping interest and jurisdiction over an issue. This is true even in the climate context where there is a tendency to view the UNFCCC as not merely operating in isolation, but operating in isolation because there is no other institution that possesses the capacity necessary to address the problem. This depiction, however, masks the alternative routes that climate change policy could have followed at its inception. As Meyer notes:

Most of the major emitters in the world in 1992 were OECD (Organization for Economic Co-operation and Development) countries and therefore members of the International Energy Program (IEP) Agreement, which created the IEA (International Energy Agency). A plan to reduce global emissions through binding legal obligations applicable only to developing countries (in other words, an agreement very similar to the Kyoto Protocol) could thus have been worked out through the OECD as an amendment to the IEP Agreement. Such an arrangement would have had the benefit of allowing closer coordination between developed countries' general energy consumption policies and their climate change-specific efforts.¹⁹⁸

The existence of other potential avenues for developing a climate regime suggests that there is some existing capacity for institutional competition. More specifically, there are a handful of institutions, including the OECD, the IEA, the International Renewable Energy Agency (IRENA),¹⁹⁹ the Organization for Petroleum Exporting Countries (OPEC), and the

197. Again, the main exception being that the Montreal Protocol plays a part in setting the agenda when greenhouse gases are also ozone-depleting substances. *See* Montreal Protocol on Substances that Deplete the Ozone Layer, *supra* note 82, art. 16.1.

198. Timothy Meyer, *From Contract to Legislation: The Logic of Modern International Lawmaking*, 14 CHI. J. INT'L L. 559, 602-03 (2014).

199. The International Renewable Energy Agency (IRENA) "is an intergovernmental organisation that supports countries in their transition to a sustainable energy future, and serves as the principal platform for international cooperation, a centre of excellence, and a repository of policy, technology, resource and financial knowledge on renewable energy." As of 2014, IRENA had 131 members, including the United States, the European Union, China and India, as well as 37 signatories. *About IRENA*, IRENA, <http://www.irena.org/Menu/index.aspx?PriMenuID=13&mnu=pri> (accessed Oct. 14, 2014). As Steven Ferrey notes, "IRENA functions in a manner similar to the International Energy Agency (IEA) and to the International Atomic Energy Agency (IAEA). These agencies give financial, practicable and

WTO that possess some level of interest and influence in the context of energy decisionmaking. The existence of multiple institutions with some level of jurisdiction over energy-related matters suggests that there is capacity outside of the UNFCCC to begin reshaping the climate agenda through external energy decisionmaking processes. This may lead to positive or negative results. As Meyer notes when discussing the issue of fragmentation in regards to energy policy:

Fragmenting jurisdiction allows organizations such as the IEA and OPEC to function without the paralysis that besets institutions like the UNFCCC. But animating governance within these institutions through narrow jurisdiction has the effect of raising the costs of coordinating legal rules across related institutions, such as the IEA and the UNFCCC. Fragmentation thus animates governance within institutions while inhibiting governance across institutions.²⁰⁰

Fragmentation, thus, creates the potential for inertia-bucking competition, while also creating added challenges with regards to consistency, procedural costs, and complexity as well as the fundamental questions of equity that accompany any process that assigns decisionmaking power to a smaller handful of state actors.

The goal here is not to unpack the potential pros and cons but to highlight that “some issues, like energy and climate change, are functionally linked even if they are not institutionally linked,”²⁰¹ and that these functional linkages provide opportunities for assessing the possible role that institutions other than the UNFCCC could play in nudging the climate change paradigm out of the constrained corner in which it has become so tightly wedged.

C. Climate Change & International Environmental Law: Legal Problem, Legal Solution?

If it is true, as Cicero posited, that “[t]he welfare of the people is the ultimate law,”²⁰² then it is also true that protecting the welfare of the people in the face of climate change demands much more than formal law. On the basis of this premise, this Section explores the extent to which any system

technical support to member countries, with IRENA focusing particularly in developing countries regarding their renewable energy potential.” 1 L. OF INDEP. POWER § 3:8 (2014).

200. Meyer, *supra* note 198, at 566.

201. *Id.* at 602.

202. MARCUS TULLIUS CICERO, III DE LEGIBUS § III, ¶ 8 (T.E. Page et al eds., trans. Clinton Walker Keyes 1952) (52 B.C.).

of climate change law must necessarily be situated amidst a much more extensive governance system; a governance system that is responsive to the processes and institutions of law, but that is also inclusive of the wider set of public, private, and intergovernmental activities that shape and support ongoing lawmaking processes. This examination of the utility of the *law* piece of the international environmental law framing will be brief and will focus on key pieces of the governance system based on the assumption that there is already widespread understanding of the ways in which law is the foundation upon which a more comprehensive set of climate change policies must be built.

As discussed *supra* in Section III(C), there is general recognition that perceiving the international policy space as one occupied not just by systems of law, but also by more extensive governance systems better reflects the realities of the pluralistic international system. This system is shaped by formal law, informal rules and norms, and increasingly by public and private non-state actors and the codes that they develop that influence individual and collective behavior. All of these influences interact to shape the socio-legal environment in which decisions are made. Law continues to sit at the center of this system; it is the heart of the system but it invigorates and, is invigorated by, the networks of actors and institutions that surround it.

This is particularly true in the context of international environmental law where it is often difficult to distinguish the lines between hard and soft law both in substance and effect,²⁰³ where non-state actors play an increasingly important role in the creation and implementation of international environmental law, and where the lines between where law ends and the surrounding system of environmental governance begin are often hard to detect.

As previously discussed, there is a vibrant conversation among scholars of international environmental law about the label we use to describe the evolving system of law and policy that influences decision-making in the environmental context. That discussion—focusing on increasing calls to conceive of the space in terms of global environmental law, transnational environmental law, or global environmental governance²⁰⁴—reveals how this debate highlights the many ways in which environmental regimes involve not just the interaction among different systems of law but also the interaction between systems of law and the multitude of actors, institutions, and agreements that directly and indirectly shape, and are shaped by these systems of law.

203. See, e.g., Bodansky, *supra* note 14, at 99-100.

204. See discussion *supra* Section III(C)(2).

This is equally true in the narrower climate change context. As amply discussed elsewhere, climate change is a problem of global, transnational, regional, state, and local character that pushes us to transcend jurisdictional lines and to approach climate change as a larger governance challenge that encompasses, but also reaches beyond, the boundaries of international law.²⁰⁵ Here, rather than offering a diluted discussion of all of the acts and actors that animate the climate change policy space, this Section briefly emphasizes two sets of key actors who have and will continue to shape climate change policy within and beyond formal lawmaking processes: civil society and the private sector.

Since the onset of negotiations, civil society has played a vital role in shaping climate change debates and strategies at every level of governance. The involvement of civil society groups in environmental policy dates back to the late 1960s, when the growing social movement around environmental protection helped mobilize support for the development of new environmental laws at the domestic and global levels. The role of civil society continued to influence environmental decision-making over the years, with the 1992 United Nations Conference on Environment and Development in Rio de Janeiro (Earth Summit) representing an apex in civil society influence over international environmental law. The Conference brought together political and civic leaders from all over the world in one of the most cooperative environmental policy-making forums of all time. As a result of the energy and initiative brought to the Conference in Rio, the global community adopted a suite of hard and soft law agreements, including the UNFCCC.²⁰⁶

Emerging from its Rio roots, the climate change debate continues to be heavily influenced by civil society actions. From the massive climate change litigation campaigns in the United States,²⁰⁷ to the global campaign to high-

205. See generally Deepa Badrinaraya, *Global Warming: A Second Coming for International Law?*, 85 WASH. L. REV. 253 (2010); Carlarne, *Good Climate Governance*, *supra* note 38; Hari Osofsky, *Climate Change Litigation as Pluralistic Legal Dialogue*, 26A STAN. ENVTL. L.J. 181 (2007).

206. Other agreements negotiated at Rio included: the Convention on Biological Diversity (CBD); the Statement of Principles for the Sustainable Management of Forestry; the Rio Declaration on Environment and Development; and Agenda 21, which the UN Commission on Sustainable Development, and prompting the subsequent adoption of the United Nations Convention to Combat Desertification.

207. For discussions of this litigation campaign and its implications, see Dave Markell & J.B. Ruhl, *An Empirical Assessment of Climate Change in the Courts: A New Jurisprudence or Business as Usual?*, 64 FLA L. REV. 15 (2012); Benjamin Ewing & Douglas A. Kysar, *Prods and Pleas: Limited Government in an Era of Unlimited Harm*, 121 YALE L.J. 350, 355 (2011); Hari M. Osofsky, *AEP v. Connecticut's Implications for the Future of Climate Change Litigation*, 121 YALE L.J. ONLINE 101, 102 (2011), available at <http://yalelawjournal.org/2011/09/13/osofsky.html>;

light the linkages between climate change and human rights,²⁰⁸ to ongoing efforts to develop new frameworks for responding to climate change displaced peoples²⁰⁹ and compensating climate victims,²¹⁰ to focused campaigns to stop new fossil fuel projects,²¹¹ and beyond, civil society campaigns have helped to mobilize awareness of the many and varied impacts of climate change. At times, these civil society campaigns have played direct roles in influencing both public opinion²¹² and the development of emergent legal and regulatory regimes.²¹³ At every level, civil society plays an indispensable role both in innovating and prodding legal and political decision makers into responding to climate change.

Beyond the sphere of civil society actors that animate efforts to create a more extensive system of climate change governance, the private sector has an equally indispensable role to play in addressing climate change. In critical part, as the IPCC notes in the 5AR, “[i]n many countries, the private

William C.G. Burns & Hari M. Osofsky, *Overview: The Exigencies that Drive Potential Causes of Action for Climate Change*, in ADJUDICATING CLIMATE CHANGE: STATE, NATIONAL, AND INTERNATIONAL APPROACHES 1 (William C.G. Burns & Hari M. Osofsky eds., 2009).

208. See *supra* notes 167 & 170 and accompanying text.

209. See, e.g., Maxine Burkett, *A Justice Paradox: On Climate Change, Small Island Developing States, and the Quest for Effective Legal Remedy*, 35 U. HAW. L. REV. 633 (2013); JANE McADAM, CLIMATE CHANGE, FORCED MIGRATION, AND INTERNATIONAL LAW (2012).

210. See, e.g., Maxine Burkett, *Climate Reparations*, 10 MELBOURNE J. INT’L L. 509 (2009).

211. An example of this is the campaign against the Keystone Pipeline in the United States. See, e.g., James Murphy, *Tar Sands Development: A Test for our Energy Future*, 27 SUM NAT. RESOURCES & ENV’T 54, 54-56 (2012); Bill McKibben, Op-Ed, *With the Keystone Pipeline, Drawing a Line in the Tar Sands*, YALE ENV’T 360, Oct. 6, 2011, http://e360.yale.edu/feature/with_the_keystone_pipeline_drawing_a_line_in_the_tar_sands/2448/ (“For environmentalists protesting the Keystone XL pipeline, the battle is about more than just transporting tar sands oil from Alberta. It’s about whether the United States—and the rest of the world—will finally come to its senses about global warming.”). See also Suzanne Goldenberg, *World Bank’s \$3.75bn Coal Plant Loan Defies Environment Criticism*, THE GUARDIAN, Apr. 8, 2010, <http://www.theguardian.com/business/2010/apr/09/world-bank-criticised-over-power-station> (discussing failed efforts on the part of climate activists to stop the World Bank from funding a coal-fired power plant in South Africa).

212. As Sanford Gaines highlights, “The climate change activist group 350.org, with a very small budget, has used the Internet and social networking to generate worldwide citizen action in favor of climate mitigation, including a moderately successful campaign for colleges, cities, and others to divest from fossil fuel corporations. A “crowdfunding” initiative to raise capital from many small investors for solar energy projects in California quickly surpassed its goals.” Gaines, *supra* note 72, at 10214.

213. For example, the regulatory regime for greenhouse gases under the U.S. Clean Air Act exists in large part as a result of litigation, with much of this litigation being instituted not only by states but also by environmental groups. See National Association of Clean Air Agencies, *Background and History of EPA Regulation of Greenhouse Gas (GHG)*, NACAA 2 (Feb. 17, 2012), <http://www.4cleanair.org/Documents/BackgroundandHistoryEPARegulationGHGsFeb2012post.pdf>.

sector plays central roles in the processes that lead to emissions as well as to mitigation. Within appropriate enabling environments, the private sector, along with the public sector, can play an important role in financing mitigation.”²¹⁴

In the most basic of terms, the private sector is both a primary contributor to climate change and a primary source of hope for beginning to curb climate change through changing behaviors,²¹⁵ investments in research and development, and, perhaps most critically, private sector investment in new, clean energy technologies. The IPCC AR5 emphasizes the importance of private sector investment, stating that there needs to be huge shifts in investment in order to avoid the worst impacts of climate change, noting, in particular, that “[s]ubstantial reductions in emissions would require large changes in investment patterns.”²¹⁶ The pace of investment cannot be slow. Investment in renewables and other low carbon sources “needs to at least treble by the middle of the century, while money flowing into fossil fuels has to diminish.”²¹⁷

Returning to the previous discussion about climate change as an energy problem, the massive shift away from fossil fuels that we need and the investments that we need to initiate that shift require extraordinary levels of private sector involvement. These shifts will be influenced by governmental policy and the ability of the public sector to create the rights incentives. Ultimately, however, the ability of the global community to address climate change is contingent upon the early and continued involvement of the private sector.

There is no question that law is a central tool in addressing climate change.²¹⁸ Law and the rule of law are fundamental to addressing climate change.²¹⁹ Mobilizing the radical changes needed to bring about effective

214. IPCC, *supra* note 124, SPM 5.1, at 30.

215. For example, the WGIII Report finds that: “The energy intensity of the industry sector could be directly reduced by about 25 percent compared to the current level through the wide-scale upgrading, replacement and deployment of best available technologies, particularly in countries where these are not in use and in non-energy intensive industries.” *Id.* at 24.

216. IPCC, *supra* note 124, SPM 5.1, at 27.

217. McGrath, *supra* note 191. The Report notes, in key part, that: “[t]he reduction of subsidies for GHG-related activities in various sectors can achieve emission reductions, depending on the social and economic context (high confidence).” IPCC, *supra* note 124, SPM 5.1, at 29 (emphasis omitted).

218. Law can be used to force change, to incentivize change, and to bring about gradual or abrupt changes in legal culture that lead to far-reaching changes in social culture. As Gaines suggests, “[s]ocial value transformations can happen quickly once ideas catch hold.” Gaines, *supra* note 72, at 10213.

219. Part of ensuring the effective use of law, however, must also include developing what Gaines calls a “fresh outlook on the role of law in society and the training of lawyers as

responses to climate change, however, requires heightened efforts on the part of civil society and the private sector both in demanding and facilitating these changes. Within the realm of climate change, even the world's most respected scientists and administrative agents struggle to keep pace with, much less get out in front of, environmental changes as they emerge and evolve. What hope have our law and policy makers, then, of comprehending much less getting out ahead of climate change and other global environmental problems absent concerted efforts to make this a truly collective effort? Collective not only in terms of transnational cooperation, but also in terms of inclusiveness and efforts to draw upon the civil society and the private sector, who in their collective, individual, public, and private capacities shape global capacity for change.

V. INTERNATIONAL ENVIRONMENTAL LAW & CLIMATE CHANGE LAW AT THE BRINK: THE WAGER OF OUR GENERATION

Climate change is a problem of and for international environmental law. It is that, but it is also much more. The continuing inability of international environmental law to “solve” climate change dooms neither the international environmental law project nor the climate change project. Acknowledging this relationship—and, really, the limits of this relationship—allows us to maximize how we use the tools of international environmental law to address climate change and the host of other environmental problems we face. It also forces us to think more critically about how we are going to address climate change moving forward.

Returning to the question posed at the beginning of the Article: can international environmental law deal with the big issues? In partial response to this question, Speth lamented that:

A serious disease is attacking Mother Earth, and, in response, we have dispensed pitifully weak medicine. This is not to say that the medicine did nothing—it helped a bit—but it also compounded the problem by making people mistakenly think that an effective response was being administered.²²⁰

Behind the efforts rallied by the development of international environmental law, the world changed and it changed quickly and dramatically. Those changes—that “phenomenal expansion of economic activity”²²¹—at

social and business leaders cognizant of the natural world who are oriented to restructuring social norms and economic behaviors in order to alleviate today's extreme pressures on ecosystems and preserve social and ecological resilience for future generations.” *See id.* at 10188.

220. Speth, *supra* note 24, at 780-81.

221. *Id.* at 795.

first blurred and later all but erased the lines between what is a big environmental issue and what is simply a big issue. But while the lines disappeared in reality, they persist in our legal constructs, in our political constructs, even in our more pluralistic governance constructs.

Over a decade ago, Speth framed his comments about the future of international environmental law amidst the belief that:

There is still world enough and time for this century to see the coming of a future that gives primacy to human solidarity and environmental sustainability. But this future will not be won without a profound commitment to urgent action.²²²

In his vision, international environmental law “has an essential role to play in addressing the major challenges of the global environment, but it can play that role only in a dramatically different context.”²²³

A decade later, this remains true. However, the space that we have to achieve that future has contracted. Within this constrained space, international environmental law has an invaluable role to play in improving the quality of the human environment, but we have made little ground in achieving the dramatically different context that is necessary to achieve these changes. The dramatically different context that we need requires us to break free from the idea that it is possible to address climate change, one of the most important issues of our time, without exploding the myth that this issue can be addressed without fundamental social, economic, and political shifts. Shifts that require much more than relegating resolution of this issue to a hard-working and productive, but youthful, body of law that sits at the margins of power.

Demonstrating the constraints of the space within which we operate and the urgency of the shifts needed, in May 2013, the earth crossed an unprecedented threshold: carbon dioxide emissions in the atmosphere exceeded 400 ppm for the first time in recorded history.²²⁴ As the chasm between global goals and global accomplishments widened, the earth’s atmosphere sounded a loud and clear warning call. Responding to that call requires us to be clear and direct in saying: more is needed.

The stakes are high and we are at a critical moment in determining our collective future. Confronting the similarly existential crises of nuclear warfare, Albert Camus famously opined:

222. *Id.* at 796.

223. *Id.*

224. *CO₂ at NOAA’s Mauna Loa Observatory Reaches New Milestone: Tops 400 ppm*, NOAA (May 10, 2013, 3:45 PM), <http://www.esrl.noaa.gov/gmd/news/7074.html>.

We have nothing to lose except everything. So let's go ahead. This is the wager of our generation. If we are to fail, it is better, in any case, to have stood on the side of those who choose life than on the side of those who are destroying.²²⁵

Climate change is the wager of our generation. We can choose to do nothing and face an uncertain future or we can choose to do something and begin a deliberate revolution. A revolution based on optimism and the heroic assumption that we are capable of dealing with the big issues.

225. ALBERT CAMUS, *RESISTANCE, REBELLION, AND DEATH: ESSAYS* 246 (1960) (expressed in the face of looming atomic war).