

10-1-2011

The Triumph and Failure of International Law

Ruth Gordon

Follow this and additional works at: <https://archives.law.nccu.edu/ncclr>



Part of the [International Law Commons](#)

Recommended Citation

Gordon, Ruth (2011) "The Triumph and Failure of International Law," *North Carolina Central Law Review*: Vol. 34 : No. 1 , Article 4.
Available at: <https://archives.law.nccu.edu/ncclr/vol34/iss1/4>

This Comment is brought to you for free and open access by History and Scholarship Digital Archives. It has been accepted for inclusion in North Carolina Central Law Review by an authorized editor of History and Scholarship Digital Archives. For more information, please contact jbeeker@nccu.edu.

LECTURES

THE TRIUMPH AND FAILURE OF INTERNATIONAL LAW

RUTH GORDON*

ABSTRACT

This address considers international law and the success and scope of the international system created by the United States in the aftermath of the Second World War. It then considers its biggest challenge and perhaps failure – climate change, thereby demonstrating the limits of this system. International environmental law has had successes, including phasing out the chemicals that caused damage to the ozone layer. Yet when confronted by a problem with an ostensibly extended time horizon and entailing vast short term costs, the international community has been unable to halt a disaster now in progress.

I. INTRODUCTION

This lecture is somewhat of a tale of two realities: the triumph of international law and the global system it is part of, and the failure of that system to address perhaps the most critical international challenge of our age - climate change. International law plays a significant role in our society and exemplifies the realization of a globalized system that the United States was instrumental in creating. In the aftermath of the Second World War, the United States was intent on building international institutions that would foster economic and political cooperation and hopefully save the world from future wars.¹ Towards that end international organizations such as the United Nations, the World Bank, the International Monetary Fund, the General

* Professor of Law, Villanova University School of Law. I would like to thank Associate Dean Wendy Brown Scott for inviting me to North Carolina Central School of Law as part of its 2010-2011 Speakers Series. I am deeply honored to be included among the ranks of such an impressive group of scholars.

1. The Preamble and Article 1 of the Charter of the United Nations, which the U.S. was a key player in drafting, expresses such objectives. From its precursor, the Atlantic Charter signed by U.S. President Franklin D. Roosevelt and U.K. Prime Minister Winston Churchill in 1941, to final adoption in San Francisco on June 26, 1945, the procedural history of the U.N. Charter reveals the leading role played by the United States. <http://untreaty.un.org/cod/avl/ha/cun/cun.html>.

Agreement on Tariffs and Trade,² and myriad other entities were created which have resulted in an interlocking web of global relationships and obligations.³ Matters within international, as opposed to domestic, jurisdiction have steadily expanded as the international community addresses an increasing variety of problems, and international agreements govern an increasing number of matters, making globalization a reality. Thus, in many ways, international law and cooperation have triumphed and allow nations to address quite perplexing problems and permit a degree of interaction that was unknown in previous eras.

Despite the many accomplishments of the international system, there have been disappointments and profound setbacks. We have not managed to eradicate war between nations, even if we have come close.⁴ Indeed, much of the discontent and disillusionment with international law pertains to international violence, such as human rights violations, torture and international terrorism. This lecture will not dwell on these frustrations, however, but will instead focus on what may ultimately be the biggest failure of the international system: its inability to deal with one of the most compelling ecological disasters of our time, climate change. As international environmental law came of age in the early 1970s, nations began to discuss and address environmental problems that had international dimensions. It has been complex, challenging, and not always successful. Yet, the inability to adequately conquer this particular problem may prove to be one of the greatest failings of the international system.

Part II will begin by very briefly defining international law, including how it is made, who it is made by and its ubiquity in our lives. The focus will then be narrowed to international environmental law and more particularly how the international community phased out the chemicals that were depleting the ozone layer, leading to the assumption that climate change would also be resolved. Instead, as detailed in Part III, the international community has been unable to impose adequate reductions of the greenhouse gases that are causing our climate to warm. Part IV will describe this chain of events, beginning with a brief introduction to climate change, its effects, the legal response to this phenomena and how confronting it has also meant fac-

2. For more discussion on Bretton Woods treaties, see William Diebold, Article, *Some Second Thoughts*, 10 AM. U. J. INT'L L. & POL'Y 1251 (1995); Michael P. Marilloy, Article, *Shifting Paradigms: Institutional Roles In a Changing World*, 62 FORDHAM L. REV. 1911 (1994).

3. *Id.*

4. Article 2(4) of the United Nations Charter prohibits the use of force. U.N. Charter art. 2, para. 4. The last time a nation crossed the border of another nation in violation of this article was the 1991 Iraqi invasion of Kuwait. Still, we now have international terrorism.

ing the limits of international law. Finally, Part V will offer some concluding remarks.

II. DEFINING INTERNATIONAL LAW

International Law encompasses many topics;⁵ this lecture can only afford a smattering of what is truly a huge subject. Public International Law, or international law, is the law between sovereign states.⁶ International law is made in a variety of ways,⁷ but we will focus on treaties, which comprise the vast majority of the international environmental law that is at the heart of tackling climate change. Treaties are agreements states make with other states. A treaty can be made by two states, three states, almost all states, or by any number in between. It can be akin to a contract,⁸ or it can be a much more comprehensive agreement between many states that is intended to achieve broad objectives.⁹ The subject matter of treaties is quite broad, and their effects can be quite personal. For example, if you travel abroad, many treaties make it possible. Planes could not fly between nations

5. Some of the myriad international law subjects currently taught at U.S. law schools include International Trade, International Environmental Law, International Criminal Law, Outer Space Law and International Human Rights. *See, e.g.*, ANDREW GUZMAN & JOOST H.B. PAUWELYN, *INTERNATIONAL TRADE LAW* (2009); DAVID HUNTER ET AL., *INTERNATIONAL ENVIRONMENTAL LAW AND POLICY* (4th ed. 2010); JOHN KAPLAN, ET AL., *CRIMINAL LAW: CASES AND MATERIALS* (6th ed. 2008); *THE LAW OF OUTER SPACE: AN EXPERIENCE IN CONTEMPORARY LAW-MAKING* (Manfred Lachs et al. eds., 50th Anniversary of the IISL ed. 2010); RHONA K. SMITH, *TEXTBOOK ON INTERNATIONAL HUMAN RIGHTS* (4th ed. 2010).

6. There is also what is termed private international law, which is broadly defined as a set of rules and regulations that are established or agreed upon by citizens of different nations who privately enter into a transaction and that will govern in the event of a dispute. Of course the line between public and private international law is not always so distinct or straightforward. *See e.g.*, DANIEL CHOW & THOMAS SCHOENBAUM, *INTERNATIONAL TRADE LAW* 4-7 (2008) (discussing the distinctions and overlap between international trade and private international business law).

7. The Statute of the International Court of Justice delineates the sources the court can utilize to decide the disputes that come before it. Article 38 defines those sources as follows: International conventions, whether general or particular, establishing rules expressly recognized by the contesting States; International custom, as evidence of a general practice accepted as law; The general principles of law recognized by civilized nations; Subject to the provisions of Article 59, judicial decisions and the teachings of the most highly qualified publicists of the various nations, as subsidiary means for the determination of rules of law. Statute of the International Court of Justice, art. 38, para. 1.

8. For example, the United States purchased Alaska from Russia in 1867 and the treaty through which this purchase was made resembles a garden variety contract. *See Treaty Concerning the Cession of the Russian Possessions of North America by his Majesty the Emperor of all the Russias to the United States, U.S.-Russ., ratified May 28, 1867, 15 Stat. 539.*

9. For instance the agreement establishing the World Trade Organization is comprised of over 550 pages of treaty text and is intended to eventually include almost all nations and all the rules governing trade. Marrakesh Agreement Establishing the World Trade Organization, Apr. 15, 1994, 1867 U.N.T.S. 154; The North American Free Trade Agreement (NAFTA) is a more limited agreement between Mexico, Canada, and the U.S., but it is still a broad-ranging agreement covering multiple issues. North American Free Trade Agreement, U.S.-Can.-Mex., Dec. 17, 1992, 32 I.L.M. 289 (1993).

without treaties governing air travel,¹⁰ nor could the planes land. There are even treaties governing liability if the plane crashes.¹¹ Treaties govern the international postal service, international trade, outer space, satellites and telecommunications.¹² Treaties established the United Nations and other intergovernmental organizations;¹³ a variety of treaties protect individual human rights;¹⁴ and an array of treaties govern the use of force.¹⁵

A. *International Environmental Law*

I could go on for a very long time and still only barely skim the surface,¹⁶ so let me be a bit more specific and narrow our focus to the area of international law that addresses environmental problems. International Environmental Law (IEL) began in the early 20th century¹⁷ with treaties to regulate and exploit wildlife, such as seals,¹⁸ whales¹⁹ and birds.²⁰ Most of these often bilateral treaties were meant to regulate the exploitation of wildlife and thus were based on shared use rather than conservation. IEL eventually evolved into a complex web of treaties that address a wide variety of environmental concerns. These treaties are directed towards conserving, managing and saving the global environment. Indeed, there currently are so many international environmental treaties that there are discussions of treaty over-

10. Convention on International Civil Aviation, Dec. 7, 1944, 61 Stat. 1180, 15 U.N.T.S. 295.

11. Montreal Convention, May 28, 1999, 974 U.N.T.S. 178.

12. International Postal Service: Treaty of Bern, Oct. 9, 1874, 19 Stat. 592; International Trade: General Agreement on Tariffs and Trade, Apr. 10, 1947, 61 Stat. A3; Outer Space: Convention on Registration of Objects Launched into Outer Space, *opened for signature* Jan. 14, 1975, 28 U.S.T. 695 (entered into force Sept. 15, 1976).

13. U.N. Charter pmbl.

14. Convention on the Prevention and Punishment of the Crime of Genocide, Jan. 12, 1951, 78 U.N.T.S. 277; International Convention on the Elimination of All Forms of Racial Discrimination, Jan. 4, 1969, 660 U.N.T.S. 195; Convention against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment, Dec. 10, 1984, 1465 U.N.T.S. 85; Convention Relating to the Status of Refugees, Apr. 22, 1954, 189 U.N.T.S. 137; International Covenant on Civil and Political Rights, Mar. 23, 1976, 999 U.N.T.S. 171; International Covenant on Economic, Social, and Cultural Rights, Jan. 3, 1976, 993 U.N.T.S. 3.

15. Geneva Convention Relative to the Protection of Civilian Persons in Time of War, Aug. 12, 1949, U.N.T.S. 287. The use of force is generally illegal, although there are exceptions. U.N. Charter art. 2, para. 4, and art. 51.

16. For example, the United States alone enters into over 156 international agreements each year by way of the treaty-making power (U.S. Const. art. II, § 2 cl. 2) or executive agreements. Oona A. Hathaway, *Treaties' End: The Past, Present, and Future of International Law-making in the United States*, 117 *YALE L.J.* 1236, 1258-60 (2008).

17. A.C. KISS & DINAH SHELTON, *INTERNATIONAL ENVIRONMENTAL LAW* (3d ed. 2004); See also *The Evolution of International Environmental Governance*, NATURAL RESOURCES DEFENSE COUNCIL, <http://www.nrdc.org/international/fgovernance.asp> (last visited Oct. 11, 2011).

18. Convention for the Preservation of Fur Seals, July 7, 1911, 37 Stat. 1542.

19. International Convention for the Regulation of Whaling, Dec. 2, 1946, 62 Stat. 1716.

20. Migratory Bird Treaty Act of 1918, U.S.-U.K.-Can., July 3, 1918, 40 Stat. 755.

load.²¹ Thus, I can only present a very small taste of the myriad environmental subjects that the international community now addresses through joint action. What follows is only a smidgen of the many instruments that comprise this broad and wide-ranging arena.

The Convention on Trade in Endangered Species (CITES) is the treaty that governs trade in endangered species.²² Species are placed on various lists in accordance with the degree to which they are threatened, and various permits are required to bring animals, plants or their derivatives across international borders.²³ This system is irrelevant to the many species that are endangered but not traded,²⁴ yet given its multilateral nature and its focus on conservation, CITES was a marked improvement on earlier wildlife treaties and has been responsible for saving various species from likely extinction; the most famous being the elephant.²⁵ The adoption of the Convention on Biological Diversity²⁶ also represented a progression in international efforts to save threatened species. This treaty addressed the loss of not only species, but also of genes and ecosystems.²⁷ At the same time it harkens back to the roots of international environmental law by saving habitats in part by attempting to make those habitats marketable to resident populations; in one sense it is a variation on shared use.²⁸

There are treaties governing the global commons, such as Antarctica²⁹ and the world's oceans.³⁰ Bilateral and multilateral regional agreements regulate the use of rivers, lakes and other waterways.³¹

21. Edith Brown Weiss, *International Environmental Law: Contemporary Issues and the Emergence of a New World Order*, 81 GEO. L.J. 675 (1993) (discussing the issue of "treaty congestion" in international environmental law).

22. Convention on International Trade in Endangered Species of Wild Fauna and Flora, July 1, 1975, 993 U.N.T.S. 243 [hereinafter CITES].

23. CITES, *supra* note 22, at art. III-IV.

24. The most prominent example today is the polar bear, which is under extreme stress from changes in the Arctic due to climate change. Maggie Kuhn, *Climate Change and the Polar Bear: Is the Endangered Species Act Up to the Task?*, 27 ALA. L.REV. 126, 139 (2010).

25. Michael J. Glennon, *Has International Law Failed the Elephant?*, 84 AM. J. INT'L L. 1 (1990); Bill Padgett, *The African Elephant, Africa, and CITES: The Next Step*, 2 IND. J. GLOBAL LEGAL STUD. 529 (1995); Sam B. Edwards, *Legal Trade in African Elephant Ivory: But Ivory to Save the Elephant?*, 7 ANIMAL L. 119 (2001).

26. Convention on Biological Diversity, Dec. 29, 1993, 1760 U.N.T.S. 79.

27. *Id.* at 152.

28. *Id.* at 148-149 and 152-156.

29. Antarctic Treaty, June 23, 1961, 402 U.N.T.S. 71.

30. U.N. Convention on the Law of the Sea, *opened for signature* Dec. 10, 1982, 1833 U.N.T.S. 397 (entered into force Nov. 16, 1994). Not only is there a major comprehensive treaty addressing the use of the oceans by nation-states, the UNCLOS, but there are additional treaties dealing with ocean pollution, oil pollution and ocean dumping. See, e.g. Convention on the Prevention of Maritime Pollution by Dumping of Wastes and Other Matter, Nov. 13, 1972, 1046 U.N.T.S. 120; Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, Mar. 22, 1989, 1673 U.N.T.S. 126.

31. For example, the United States and Canada have an agreement regarding the Great Lakes (Great Lakes Water Quality Agreement, U.S.-Can., Apr. 15, 1972, 23 U.S.T. 301) and the

When emissions of sulfur dioxide and nitrogen oxides threatened the forests of Poland, Romania, Germany, Switzerland, Canada, and France, environmental treaties emerged to address acid rain, a problem that knows no borders.³² Nonetheless, it is in the last two decades of the 20th century that international environmental law undertook a significant turn in both focus and complexity.

In 1985, the international community realized that a hole in the ozone layer was opening in the atmosphere on a yearly basis.³³ It seemed our air conditioners, refrigerators, aerosol sprays and other, often seemingly benign commodities, were releasing Chlorofluorocarbons (CFCs), Hydrochlorofluorocarbons (HFCs)(found in refrigerants) Methyl Bromide (found in pesticides),and Methyl Chloroform (an industrial solvent). These substances were slowly and inexorably destroying the ozone layer, which protects plants, humans and other animals from the damaging rays of the sun. Remarkably, the nations

United States has a treaty with Mexico regulating the use of the Rio Grande (1906 Convention for the Equitable Division of the Waters of the Rio Grande for Irrigation Purposes, U.S.-Mex., May 21, 1906, 34 Stat. 2953). International treaties also govern the use of the Danube River (Danube River Protection Convention, June 29, 1994, *available at* <http://www.icpdr.org/icpdr-pages/drpc.htm>) and the Nile River (Nile River Basin Initiative, *available at* <http://www.nilebasin.org/newsite/> (last visited October 19, 2011)).

32. Agreement on Air Quality, U.S.-Can., Mar. 13, 1991, 30 I.L.M. 676. Acid rain is defined as a mixture of wet and dry deposition from the atmosphere containing higher than normal amounts of nitric and sulfuric acids. *See also* Convention on Long-Range Transboundary Air Pollution, Nov. 13, 1979, T.I.A.S. No. 10541.

33. Ozone is a molecule containing three oxygen atoms . . . even a small amount of ozone plays a key role in the atmosphere. The ozone layer absorbs a portion of the radiation from the sun, preventing it from reaching the planet's surface. Most importantly, it absorbs the portion of ultraviolet light called UVB. UVB has been linked to many harmful effects, including various types of skin cancer, cataracts, and harm to some crops, certain materials, and some forms of marine life. At any given time, ozone molecules are constantly formed and destroyed in the stratosphere. The total amount, however, remains relatively stable. . . . [R]ecently, however, convincing scientific evidence has shown that the ozone shield is being depleted well beyond changes due to natural processes. . . . [T]hey [chlorofluorocarbons (CFCs)] are stable, nonflammable, low in toxicity, and inexpensive to produce. . . [and are used as] refrigerants, solvents, foam blowing agents, and in other smaller applications. Other chlorine-containing compounds include methyl chloroform, a solvent, and carbon tetrachloride, an industrial chemical. Halons, extremely effective fire extinguishing agents, and methyl bromide, an effective produce and soil fumigant, contain bromine. All of these compounds have atmospheric lifetimes long enough to allow them to be transported by winds into the stratosphere. Because they release chlorine or bromine when they break down, they damage the protective ozone layer. . . . [T]here are no natural processes that remove CFCs from the lower atmosphere. Over time, winds drive the CFCs into the stratosphere. The CFCs are so stable that only exposure to strong UV radiation breaks them down. When that happens, the CFC molecule releases atomic chlorine. One chlorine atom can destroy over 100,000 ozone molecules. The net effect is to destroy ozone faster than it is naturally created.

Ozone Science: The Facts Behind the Phaseout, www.epa.gov, http://www.epa.gov/Ozone/science/sc_fact.html (last updated Aug. 19, 2010); *See also* www.theozonehole.com (last visited October 19, 2011).

that used or contemplated using these chemicals managed to discontinue their use by the end of the century.³⁴

The international law-making process is notoriously slow – some would say glacial. The difficulty lies in states being sovereign entities that make rules to bind others. To be subjects that are themselves bound by laws, states must agree to be obligated by the rules that they themselves make; needless to say, this can be a protracted and very political process. The Vienna Convention for the Protection of the Ozone Layer and the Montreal Protocol³⁵ established what proved to be very effective mechanisms to accelerate this process, at least when it comes to implementing scientific recommendations. The Vienna Convention was, what has come to be known as, a framework convention that imposed few, if any actual commitments.³⁶ Concrete obligations were to come later in the form of protocols, such as the Montreal Protocol where states actually assumed specific, binding obligations.³⁷

Under the Protocol, nations met regularly to discuss and focus on ozone depletion while scientists met regularly to advise Member States.³⁸ Technical aspects of the Protocols could be amended by majority vote, and all parties were bound by the amendments unless a party specifically opted out.³⁹ As scientists discovered the problem was even worse than anticipated, the treaty structure permitted the phase-out to proceed in accordance with emerging scientific evidence, and thus, the rate at which the chemicals were banned could keep pace with unfolding scientific evidence. These chemicals were phased out as of January 1, 2000, and the ozone layer is recovering; by 2050, it is expected to recover fully.⁴⁰ My very strong guess is that most Americans were unaware that these events transpired and that they themselves played a small role, even if it was simply to replace old refrigerators, air conditioners and other goods phased out under these treaties, with units that did not have such a negative effect on the ozone layer. Saving the ozone layer was one of the biggest triumphs of international environmental law and it was spectacularly successful.

34. Vienna Convention for the Protection of the Ozone Layer art. 3-6, *opened for signature* Mar. 22, 1985, I.L.M. 1529 (entered into force Sept. 22, 1988).

35. *Id.*; Montreal Protocol on Substances that Deplete the Ozone Layer, Sept. 16, 1987, 26 I.L.M. 1550.

36. *Id.*

37. *Id.*; Montreal Protocol on Substances that Deplete the Ozone Layer, *supra* note 35, at 8.

38. Montreal Protocol on Substances that Deplete the Ozone Layer art. 9, 11, *supra* note 35, at 8.

39. *Id.* at art. 19; Vienna Convention for the Protection of the Ozone Layer art. 18-19, *supra* note 34, at 7.

40. Env'tl. Investigation Agency, *The Continued Illegal Trade in Ozone-Depleting Substances and the Threat Posed to the Montreal Protocol Phase-out*, EIA-INTERNATIONAL.ORG, <http://www.eia-international.org/unfinished-business> (last visited October 19, 2011).

III. ADDRESSING CLIMATE CHANGE

When another global problem, climate change, confronted the international community, there was a strong, even if ill informed, sense that we could also conquer this monumental problem.⁴¹ But constructing an adequate legal regime to halt the progression of climate change has proven to be damningly elusive. Indeed, if tackling ozone depletion was the international community's greatest environmental achievement, addressing climate change may be its most dire failure, a failure that may have enormous – perhaps devastating – consequences.⁴²

Evidence of the dangers of climate change are mounting, and it is frightening.⁴³ Even if we eliminate all greenhouse gas (GHG) emissions immediately,⁴⁴ the planet will continue to grow warmer; indeed, our urgent and imperative task is to slow the rate and extent of an ongoing transformation. As the climate is transformed, numerous animal migratory patterns are in flux, and flora and fauna are increasingly being found where it has never been found before.⁴⁵ Both land and water-based ecosystems are under stress and species, such as the polar bear, already face the prospect of extinction.⁴⁶

It is impossible to state that any particular weather occurrence, whether it is Hurricane Katrina in 2005 or the 2011 floods and tornados in the United States, is attributable to climate change. Still there is a growing sense that extreme weather events are increasing.⁴⁷ Europe has experienced both severe heat waves and deep freezes;⁴⁸ in

41. See Stephen J. DeCanio & Catherine S. Norman, *An Economic Framework for Coordinating Climate Policy with the Montreal Protocol*, 7 SUSTAINABLE DEV. L. & POL'Y 41 (2006); Laura Thomas, *A Comparative Analysis of International Regimes on Ozone and Climate Change with Implications for Regime Design*, 41 COLUM. J. TRANSNAT'L L. 795 (2003).

42. See, e.g., IPCC, 2007: CLIMATE CHANGE 2007: IMPACTS, ADAPTATION AND VULNERABILITY. CONTRIBUTION OF WORKING GROUP II TO THE FOURTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (Parry M. et al. eds. 2007).

43. For a detailed assessment of the projected impact of climate change, along with their probabilities, see, for example, IPCC, 2007: CLIMATE CHANGE 2007: THE PHYSICAL SCIENCE BASIS. CONTRIBUTION OF WORKING GROUP I TO THE FOURTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (Solomon S. et al. eds. 2007). The Intergovernmental Panel on Climate Change, established in 1988 and made up of leading scientists and governments, has been promulgating assessments of the rate and impact of climate change for over twenty-three years.

44. GHG emissions include a basket of over thirty gases, the most prominent and well known of which, carbon dioxide, is emitted upon burning fossil fuels.

45. Randall S. Abate, *Climate Change, the United States, and the Impacts of Arctic Melting: A Case Study in the Need for Enforceable International Environmental Human Rights*, 26 A STAN. ENVTL. L.J. 3, 32-36 (2007).

46. *Id.*

47. See generally, HEIDI CULLEN, THE WEATHER OF THE FUTURE: HEAT WAVES, EXTREME STORMS, AND OTHER SCENES FROM A CLIMATE CHANGED PLANET (2010).

48. For example, heat waves in Europe have caused at least 35,000 deaths; see, e.g., Shaoni Battacharya, *European Heatwave Caused 35,000 Deaths*, NEW SCIENTIST (Oct. 10, 2003, 13:38

2011 Australia suffered the worst floods in its history.⁴⁹ The U.S. has witnessed more than its usual share of tornados, floods, and heat waves, as well as longer and harsher winters in some parts of the country.⁵⁰ While we cannot attribute these events to climate change,⁵¹ I believe we must begin to expect the unexpected when it comes to weather.⁵²

At present, glaciers are melting, snow cover is decreasing and less snow is falling in the Arctic regions.⁵³ The North Pole is an ice-covered ocean, while the South Pole is comprised of the snow and ice-covered continent of Antarctica. The National Oceanic and Atmospheric Administration (NOAA)⁵⁴ has been recording decreasing ice cover in the Arctic Ocean over the last ten years.⁵⁵ In 2007, I visited the nation of Panama as part of an academic delegation and the journey included a meeting with officials from the Panama Canal Authority (PCA). Panama decided to build a third Panama Canal lock to accommodate larger ships; it is scheduled to open on the Canal's one

PM), <http://newscientist.com/article/dn4259-european-heatwave-caused-35000-deaths.html> (the severe weather in Europe caused at least 80 deaths); see, e.g., *More Than 80 Dead in European Winter Weather*, BBC NEWS (Dec. 22, 2009, 01:43:35 AM), <http://news.bbc.co.uk/2/hi/8424953.stm>; see also CULLEN, *supra* note 47, at 51.

49. Aubrey Belford & Meraiah Foley, *Floods Peak, Leaving Ruin in Australian City*, N.Y. TIMES, Jan. 14, 2011, at A7.

50. A.G. Sulzberger, *As Missouri River Rises, Control Efforts Take Shape*, N.Y. TIMES, June 3, 2011, at A14; *US Tornadoes Killed at Least 350*, VOA NEWS (Apr. 30, 2011), <http://www.voanews.com/English/news/US-Tornadoes-Killed-at-Least-350-121020524.html>; see also U.S. *Winter to Be Severe, Long-Lasting*, UPI.COM (Jan. 20, 2011, 6:46 PM), http://www.upi.com/Top_News/US/2011/01/20/US-winter-to-be-severe-long-lasting/UPI-50961295567176; see also Timothy Williams, *Stretches of the Country Face Record Setting Heat*, N.Y. TIMES, June 10, 2011, at A17.

51. See, e.g., *Climate Change and the Queensland Floods*, GRAHAM READFEARN (Jan. 18, 2011, 01:34 PM), http://www.readfearn.com/2011/01/climate_change_queensland_floods/; *Tornadoes and Climate Change 'Unrelated'*, NEWS24 (South Africa) (May 24, 2011, 10:35 AM), <http://www.news24.com/SciTech/News/Tornadoes-and-climate-change-unrelated-20110523>.

52. See generally, CULLEN, *supra* note 47.

53. Arctic Climate Impact Assessment, IMPACTS OF A WARMING ARCTIC: ARCTIC CLIMATE IMPACT ASSESSMENT (2004) available at <http://www.acia.uaf.edu>.

54. The National Oceanic and Atmospheric Administration is a federal agency under the United States Department of Commerce whose mission is "to understand and predict changes in climate, weather, oceans, and coasts" and "to conserve and manage coastal and marine ecosystems and resources." *About NOAA*, NAT'L OCEANIC & ATMOSPHERIC ADMIN., <http://www.noaa.gov/about-noaa.html> (last visited October 19, 2011).

55. In the past thirty years, the annual average sea-ice coverage in the Arctic region has decreased by about 8% and the summer sea-ice has decreased by 15-20%. Abate, *supra* note 45, at 30. Some models are projecting an almost total loss of summer sea ice by 2100. *Id.* "The sea ice that remains is becoming thinner with average reductions at 10-15% with some areas showing a loss of thickness up to 40%". *Id.* In addition, "permafrost temperatures have risen as much as 2°C in the past few decades, and permafrost degradation is projected to affect 10-20% of the present permafrost area in the next century." *Id.* See also, *Arctic Sea Ice Shatters All Previous Record Lows*, NAT'L SNOW & ICE DATA CTR (Oct. 1, 2007), http://inside.org/news/press/2007_seaiceminimum/20071001_pressrelease.pdf; A. Proshutinsky et al., *ArcticReportCard: Update for 2010*, NAT'L OCEANIC & ATMOSPHERIC ADMIN. (OCT. 18, 2010), <http://www.arctic.noaa.gov/reportcard/ocean.html>.

72 NORTH CAROLINA CENTRAL LAW REVIEW [Vol. 34:63]

hundredth anniversary in 2014.⁵⁶ With a melting Arctic Ocean, however, companies have already begun building ice-breaking ships believing that goods can be transported across the top of the planet rather than between North and South America, making the Panama Canal less necessary than it has historically been. When I expressed these thoughts, my hosts replied that they did not believe my scenario would unfold until 2050. I did not press the point but I was, and am now even more, skeptical and thought they were being overly optimistic.

Other dire events are on the horizon, even if it is difficult to attribute specific events to a warming climate with absolute certainty.⁵⁷ Still, the Intergovernmental Panel on Climate Change, (IPCC), which is comprised of both scientific experts and government officials, has issued a series of reports describing the possibilities and the likelihood of various potential consequences of climate change;⁵⁸ this body predicts the following.⁵⁹ As the oceans continue to grow warmer, we face the prospect of an increasing number of storms that will become progressively more intense.⁶⁰ Exceptionally hotter days and heat waves, drought, elevated disease vectors, agricultural failures and

56. Ruth Gordon, *Panama and the Specter of Climate Change*, 41 U. MIAMI-INTER-AM. L.REV. 129, 176-180 (2010). The project is being financed in part by the Japanese government. Leo Lewis, *China eyes Panama Canal Expansion*, THE AUSTRALIAN (Feb. 8, 2010, 8:16 AM), <http://www.theaustralian.com.au/business/news/china-eyes-panama-canal-expansion/story-e6frg90o-1225827691243>. The Panama Canal is a 50 mile-wide man-made system of channels, locks, and dams that allow ships to pass through the Isthmus of Panama from the Pacific Ocean to the Atlantic Ocean. *Panama Canal*, AB PANAMA, <http://www.abpanama.co/about-panama/panama-canal.php> (last visited October 19, 2011). The current locks can accommodate ships that are 32.3 meters wide and 294.1 meters long. *Id.* When the expansion is completed, the new locks will accommodate ships more than 34 meters wide and over 400 meters long. *Id.*

57. This reality is exploited by climate change skeptics to debunk the entire theory of climate change. Stefan Rahmstorf, *The Climate Sceptics*, POTSDAM INST. FOR CLIMATE IMPACT RESEARCH (2004), http://www.pik-potsdam.de/~stefan/Publications/Other/rahmstorf_climate-sceptics/2004.pdf.

58. The IPCC is currently organized in 3 Working Groups and a Task Force. They are assisted by Technical Support Units, which are hosted and financially supported by the Government of the developed country co-chair of that Working Group/ Task Force. Working Group I deals with "The Physical Science Basis of Climate Change", Working Group II with "Climate Change Impacts, Adaptation and Vulnerability" and Working Group III with "Mitigation of Climate Change". Working Groups also meet at the Plenary at the Level of Representatives of Governments. The main objective of the Task Force on National Greenhouse Gas Inventories is to develop and refine a methodology for the calculation and reporting of national GHG emissions and removals.

Structure, INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, http://www.ipcc.ch/organization/organization_structure.shtml#burea (last visited October 19, 2011).

59. The IPCC is highly regarded, but tends to make more conservative predictions. Ian Angus, *The IPCC and the Conservatism of Consensus*, CLIMATE AND CAPITALISM (Apr. 5, 2007), <http://climateandcapitalism.com/?p=62>.

60. *Climate Change 2007: Synthesis Report*, *supra* note 42.

myriad other consequences are also projected.⁶¹ Villages are already being moved above the Arctic Circle, and there may already be climate change refugees in the South Pacific.⁶² Indeed, Southern tier countries face a multitude of challenges.⁶³ Some island nations may eventually be wiped off the map but not before living with eroding beaches, shrinking tourist revenues, devastating storms and the like.⁶⁴ African nations face severe drought, desertification as land turns to desert, increasingly perilous storms, more infectious diseases and whatever else quickly changing habitats may trigger.⁶⁵ These changes are likely to take place relatively quickly but still slowly enough that there may not be the cataclysm that triggers an emergency response; thus these problems are likely to linger, fester and simply grow progressively worse. Small Island nations and poor nations are the least equipped to address these consequences, being low on the technological ladder and bereft of the necessary funds to mitigate environmental disasters.⁶⁶

Climate change naysayers have maintained that climatologists are exaggerating both the rapidity and the negative effects of a warmer climate.⁶⁷ But it seems climate change modeling may have underestimated the pace of climate change and the destructive consequences of a warmer planet.⁶⁸ Predicted consequences are occurring much more swiftly than anticipated; and not only are the consequences multiplying, they are more momentous than anticipated. There are numerous harms, both large and small, that were unforeseen; indeed, almost all subjects in the environmental arena have been altered and rendered more complex and perplexing. It is alarming and humbling, for the ultimate effect of a warmer planet on flora and fauna is basically unknown, as is its definitive import for human beings.⁶⁹

61. P. SMITH, ET AL., 2007: AGRICULTURE . IN CLIMATE CHANGE 2007: MITIGATION. CONTRIBUTION OF WORKING GROUP III TO THE FOURTH ASSESSMENT REPORT OF THE INTER-GOVERNMENTAL PANEL ON CLIMATE CHANGE 52-53 (B. Metz et al. eds., 2007).

62. Ruth Gordon, *Climate Change and the Poorest Nations: Further Reflections on Global Inequality*, 78 U. COLO. L. REV. 1559, 1597-99 (2007) (mentioning the profound changes climate change has wrought on the Inuit people in the Arctic); Zoe Kenny, *Global Warming Refugees – Left to Drown?*, GREEN LEFT (Mar. 17, 2007, 11:00 AM), <http://www.greenleft.org.au/node/37255> (mentioning the impact global warming has had on the Pacific island-nation of Tuvalu).

63. *Id.* at 1589-99.

64. *Id.* at 1576-77.

65. *Id.* at 1578.

66. *Id.* at 1561.

67. *Id.* at 1575.

68. See BILL MCKIBBEN, *EARTH: MAKING A LIFE ON A TOUGH NEW PLANET* 209 (2010) (noting that it is already too late as the climate is already changing).

69. *Climate Change 2007: Synthesis Report*, *supra* note 42, at 64 (detailing the current and projected effects of climate change).

IV. CONFRONTING A CHANGING CLIMATE

Given these impending catastrophic effects, what exactly is climate change and why is it so deadly?⁷⁰ Climate change has already begun and, unlike ozone depletion, it is irreversible and likely to accelerate, especially once we pass a certain tipping point.⁷¹ Climate change is part of a natural process that we humans have distorted. GHGs such as carbon dioxide (CO₂), methane and nitrous oxide are needed and essential. Together they trap the heat from the sun and keep this heat from escaping back into the atmosphere. But there can be too much of a good thing. CO₂ is produced by burning fossil fuels – such as oil, coal and gas. Fossil fuels power our economy and the economies of most of the rest of the industrialized world, which contains over three billion people. The levels of CO₂ currently in the atmosphere are now higher than at any time in the last 650,000 years and it is leading to the effects noted above.⁷²

A. *The Dilemma*

So what is to be done about this devilishly complex problem? The most crushing harm will be in the future, whether it is when I am 65 (ten years) or when many of you are 65 (40 years) years old. Thus, even if climate change has the potential to swallow all of mankind's progress to date, it is still prospective harm. Moreover, it is impossible to determine the *precise* impact of a changing climate because the climate is, quite simply, much too complex. It could be that the ultimate consequences will be dire but not as terrible as projected. Or perhaps technology will save us and we will have the means to manage it. On the other hand, it could be far worse than projected, and our technology may not be able to keep up, or we will be expending a disproportionate share of our technological prowess and resources just trying to stay a step ahead of disaster. This uncertainty makes the choices even more difficult, for while the consequences are prospective and difficult to pinpoint, the costs are enormous and contemporary.

Still, the 2011 earthquake and tsunami in Japan unmistakably demonstrated the limits of technology against the full thrust of nature.⁷³ Japan is one of the most technologically advanced nations on

70. For a detailed explanation of climate change, see, for example, CULLEN, *supra* note 47, at 12-30.

71. *Climate Change 2007: Synthesis Report*, *supra* note 42, at 53 (noting the effects of climate change).

72. Richard Black, *CO₂ 'Highest for 650,000 Years'*, BBC NEWS (Nov. 24, 2005), <http://news.bbc.co.uk/2/hi/sci/tech/4467420.stm>.

73. See, e.g., Damian Grammaticas, *Japan Earthquake: Explosion at Fukushima Nuclear Plant*, BBC NEWS (Mar. 12, 2011, 17:32 PM), <http://www.bbc.co.uk/news/world-asia-pacific-12720219>; Ilan Keiman, *Climate Conversations – Is Climate Change Increasing Earthquake*,

earth, and it guarded against earthquakes to the limits of its capabilities. Still, Japan faced catastrophe. This scenario is quite humbling and perhaps demonstrates the wisdom of precaution, as in the precautionary principle.⁷⁴ Another factor is that initially the worst effects of climate change will be in the Global South, meaning it will disproportionately and detrimentally affect the poorer nations that did not cause the problem, rather than the richer nations that did.⁷⁵ Of course we cannot know even this scenario with certainty, although we do know that it is largely within the power of the industrialized and industrializing worlds to make a difference in the progression of climate change.

Nonetheless, climate change does not resemble ozone depletion where a hole in the atmosphere was observed by NASA and other entities, and thus, proof of an *existing* problem was before the international community and it endangered *everyone* in the here and now. Climate change is also a very challenging and expensive problem to address. Ozone depletion involved a limited number of chemicals, the primary ones being CFCs; a limited number of countries, most of them industrialized; and a small number of producers, such as DuPont First Chemical Corporation. Conversely, Climate Change is largely caused by burning fossil fuels, the very fuels that sustain the world economy and the American way of life. For example, it is both how we power all modes of transportation and in the post World War II era we chose suburban living which is heavily dependent on the automobile. Thus, American society not only needs, but is dependent on cars; indeed, according to American auto companies and many policy makers, it seems we need big cars.⁷⁶ Like all industrialized countries, albeit to varying extents, America depends on fossil fuels to heat its

ALERTNET (Mar. 15, 2011, 3:17 PM), <http://trust.org/alertnet/blogs/climate-conversations-is-climate-change-increasing-earthquakes/>.

74. The Precautionary Principle states that “when an activity raises threats of harm to the environment or human health, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically.” *The Precautionary Principle: A Common Sense Way to Protect Public Health and the Environment*, SCI. & ENVTL. HEALTH NETWORK (Jan. 2000), <http://www.mindfully.org/Precaution/Precautionary-Principle-Common-Sense.html>; See also Stephen G. Wood, et. al., *Whither the Precautionary Principle? An American Assessment From an Administrative Law Perspective*, 54 AM. J. COMP. L. 581 (2006).

75. Gordon, *supra* note 62, at 1589.

76. Of course this “truth” about the American consumer is currently in the midst of change as progressively higher gas prices make it financially untenable to sustain gas guzzling behemoths. Roland Jones, *Americans Not Very Big on Small Cars*, MSNBC.COM (June 12, 2007, 2:35 PM), <http://www.msnbc.com/id/19030555/ns/business-autos/t/americans-not-very-big-very-small-cars/>. When given the chance, Americans jumped at the chance to trade in old gas guzzlers for more fuel efficient cars; indeed the program enacted to achieve this result (and spur sales of automobiles) was overwhelmed within days of going into effect. Consumer Assistance to Recycle and Save Act of 2009, 49 U.S.C. § 32901, note sec.1302 (2009); Nick Bunkley, *Government Will End Clunker Program Early*, N.Y. TIMES, Aug. 21, 2009, at B3.

buildings, including homes and businesses. The reality is that, without fossil fuels, our lives would grind to a halt. Moreover, what are we to do with thousands of gas stations and coal fired utilities? The fact is, American culture is built on cheap energy – it almost seems that we believe it is our birthright - even if it is destroying our planet.

Other states are both better and worse. Western Europe, for the most part, is more advanced when it comes to sustainability – there is simply a different sensibility. Energy has been much more expensive for decades; and thus, cars and homes are smaller, cities are more prevalent, public transportation is more available and, as in most cities, people tend to walk more. I lived in London for well over a year without a car and have visited many cities in Europe. Not only was being without a car effortless, it was clear that a car would have almost been a disadvantage;⁷⁷ there was plenty of public transportation. Europeans made different choices – not to emphasize suburbs, not to be as dependent on cars, to have higher gas prices and thus smaller cars,⁷⁸ and these nations are now better poised to address the problem. Moreover, some European nations, such as Germany, have decided to become leaders in Green technology, while others, such as the Netherlands, fear they may someday be under water and has strong incentives to push for efforts to control GHG emissions.⁷⁹

And then there is the rising Second World, meaning the rapidly industrializing emerging market nations. These are the nations that make our clothing, our electronics, indeed most of our consumer goods; this trade is part of the World Trade Organization (WTO) system noted earlier in this lecture. The industrializing world is building factories to feed our hunger for consumables;⁸⁰ unfortunately, those countries often rely upon quite unsustainable methods in their manufacturing.⁸¹ Moreover, these nations are industrializing and while they

77. Of course the same could be said for living in New York City, which is where I spent my first 25 years – it is just that New York City is rather exceptional in the United States, and similar American cities can almost be counted on one hand.

78. Of course these choices were also bounded by less land and resources than is found in America.

79. For a discussion on the role the Netherlands has played in climate change negotiations, see *International Policy Priorities*, MINISTRY OF INFRASTRUCTURE & THE ENV'T, http://english.verkeerenwaterstaat.nl/english/topics/the-environment/international_policy_priorities/ (last visited October 19, 2011).

80. In my international trade class, I have my students examine the labels in each other's clothing, knowing that they will find that it was all made abroad, with the exception of university gear and even those items are usually made in Guam or American Samoa.

81. See Carmen G. Gonzalez, *China in Latin America: Law, Economics, and Sustainable Development*, 40 ENVTL. L. REP. NEWS & ANALYSIS 10171 (2010); Ian Barnes, *Promoting Sustainable Consumption and Production in Asia and the Pacific*, UNITED NATIONS ECON. & SOC. COMM'N. FOR ASIA & THE PACIFIC, http://www.greengrowth.org/download/sustainable_consumption_and_production_in_Asia_and_the_Pacific.pdf. For example, China has huge reserves of coal and thus relies on coal fired plants to fuel their factories. Jeffrey Hays, *Coal in China*:

have not completely adopted the sins of consumerism, at least at Western levels, modern society still means more industry, no matter the degree of consumption, and industrial society may not be environmentally sustainable – at least it has not been thus far.

B. *The Legal Response*

If the scenario is as dire as the picture I have just painted, it would be expected that there would be some type of legal response from the international community. International legal efforts to address climate change commenced with the 1992 United Nations Framework Convention on Climate Change (UNFCCC), which established procedures and processes to adopt binding limits on GHG emissions.⁸² Agreement on these limits was finally reached in the exceedingly complex 1997 Kyoto Protocol, which entered into force in 2005.⁸³ Industrialized countries committed to specific limits on GHG emissions and were afforded flexibility in meeting these objectives.⁸⁴

Certain Third World demands were met in both treaties. For instance, the UNFCCC mentions the special vulnerabilities and needs of developing countries and notes the right to further sustainable development.⁸⁵ But perhaps the most important paradigm from a Third World perspective, in both the UNFCCC and Kyoto Protocol, was the concept of ‘differential responsibilities’ for industrialized as opposed to developing countries, which were defined to include China, India, Mexico, Brazil and over 130 other countries; a bloc also known as the G77.⁸⁶ Under the Kyoto Protocol, when Industrialized (Annex I) nations assumed concrete emission reductions,⁸⁷ non-Annex I nations,

Consumption, Production, Mining and Liquefaction, FACTS AND DETAILS (April 2011), <http://factsanddetails.com/china.php?itemid=322&catid=13&subcatid=85>; Syd.S. Peng, *Understanding the Chinese Coal Industry*, COAL AGE (Aug. 26, 2010, 10:49 AM), <http://coalage.com/index.php/features/593-understanding-the-chinese-coal-industry.html>.

82. U.N. Framework Convention on Climate Change, Sept. 5, 1992, 31 I.L.M. 849.

83. Kyoto Protocol to the United Nations Framework Convention on Climate Change, *opened for signature* Dec. 10, 1997, 37 I.L.M. 22 (entered into force Feb. 16, 2005) [hereinafter Kyoto Protocol].

84. Kyoto Protocol, *supra* note 83, at 18. Flexibility mechanisms included joint implementation, Emissions Trading and the Clean Development Mechanism (CDM). The treaty refers to Annex I and II nations which are either industrialized or nations in transition, meaning members of the former Eastern bloc.

85. U.N. Framework Convention on Climate Change, *supra* note 82, at 18 (art. 3-4). The UNFCCC singles out island nations, although it also acknowledges the special difficulties of oil producing nations and also codifies the need for special funding and the transfer of technology if Third World nations are to undertake mitigation efforts.

86. *The Principle of Common but Differentiated Responsibilities: Origins and Scope*, The Centre for International Sustainable Development Law (Aug. 26, 2002), http://www.cisdsl.org/pdf/brief_common.pdf.

87. Kyoto Protocol, *supra* note 83, at 18 (art. 3, 17). Joint implementation allows industrialized nations to obtain credit for reducing emissions in other Annex I countries. The CDM is a market-based North-South mechanism whereby Annex I countries can invest in sustainable

78 NORTH CAROLINA CENTRAL LAW REVIEW [Vol. 34:63]

did not; indeed, G77 countries faced few, if any, limits under the Protocol.⁸⁸ Of course these nations were not responsible for climate change, although they will disproportionately experience its effects.⁸⁹ Unfortunately, 'Differential responsibilities' has been a significant part of the American justification for refusing to adopt mandatory emission reductions.⁹⁰

V. CONCLUSION

The United States led the struggle to save the ozone layer, but it has sat this one out; indeed our nation has actually been an obstacle to progress. There are Americans who do not believe in climate change, which of course is their prerogative. The problem is this group includes members of Congress, who should know better (and I do wonder if they do know better, but find it politically expedient to maintain otherwise). At this juncture, even China, which is at the heart of our rationale for not taking action,⁹¹ is becoming a leader in green technology and has adopted cap and trade, meaning they will begin to take measures to limit their emissions.⁹²

Still, even if every nation fulfilled its obligations under the Kyoto Protocol, and the United States became a party, GHG emissions would only be reduced by less than approximately 6%.⁹³ The scientific community believes effective reductions must be more in the range of 60-80%, if we are to decelerate the rate of climate change.⁹⁴ Five

GHG reduction projects in non-Annex I countries. Carbon trading permits the sale of emission credits which can be bought and sold by selected companies in industrialized nations.

88. Kyoto Protocol, *supra* note 83, at 18.

89. Gordon, *supra* note 62, at 1562.

90. Michael Weisslitz, Note, *Rethinking the Equitable Principle of Common but Differentiated Responsibility: Differential Versus Absolute Norms of Compliance and Contribution in the Global Climate Change Context*, 13 COLO. J. INT'L L. & POL'Y 473, 495 (2002); see S. Res. 98, 105th Cong. (as passed by Senate, July 29, 1997). ("The Senate strongly believes that the proposals under negotiation, because of the disparity of treatment between Annex I Parties and Developing Countries and the level of required emission reductions, could result in serious harm to the United States economy, including significant job loss, trade disadvantages, increased energy and consumer costs. . .").

91. See *U.S. Rejects Possibility of Signing Kyoto Protocol*, SYDNEY MORNING HERALD, Oct. 25, 2002, available at <http://smh.com.au/articles/2002/10/25/1035416938187.html>. American policy-makers have used the lack of binding emission reductions in developing countries, meaning China and India, as a justification for the lack of binding reductions in the U.S. The stated fear is it would make U.S. companies uncompetitive. *Id.*

92. *China Adopts Cap-and-Trade to Curb Emissions*, WORLD MEDIA FOUND., Apr. 29, 2011, available at <http://loe.org/shows/segments.html?programID=11-P13-00017&segmentID=1>. See also Cao Haili, *Cap-and-Trade is a Ferrari; China Needs a Tractor*, SOLVE CLIMATE NEWS GROUP, Jan. 4, 2010, available at <http://solveclimatenews.com/news/20100104/china-ready-cap-and-trade>.

93. *Frequently Asked Questions*, PBL NETHERLANDS ENVTL. ASSESSMENT AGENCY, <http://www.pbl.nl/en/dossiers/climatechange/faqs> (last visited October 19, 2011).

94. Eric Bond, *Climate Change and the Kyoto Protocol*, THE KYOTO PROTOCOL (Jan. 16, 2003), http://climatechange.sea.ca/kyoto_protocol.html.

years ago, I hoped against hope that we would somehow be able to achieve this objective. I even thought the Great Recession, along with a new, more sympathetic president might be a catalyst to U.S. engagement – that we could put people back to work by making our nation more energy efficient - by retrofitting buildings, constructing and refurbishing mass transit, making more energy efficient cars, and undertaking the myriad innovations and changes necessary for a leaner, more ecologically aware and less wasteful America. I believed we might finally find the political will to adequately address this issue, even if it was in the guise of creating jobs. I hoped that electing President Obama meant we would finally join the Kyoto Protocol and begin doing our part; that we would finally join international efforts, no matter how inadequate those efforts may be, for surely doing something is better than doing nothing or going in reverse.

These days, I think not and believe that perhaps I was hopelessly naïve.⁹⁵ Just as President Bush could not block Kyoto alone, President Obama alone cannot bring about U.S. participation in international climate change efforts. As with much else transpiring in our nation these days, I imagine we will bumble along until it becomes untenable to refrain from taking action. By then, the irreversible changes already taking place will be at a level where we, our children and our grandchildren will be expending a large portion of our resources and intellect coping with an unfriendly and even hostile environment that may no longer be sustaining and supportive.⁹⁶ I doubt future generations will understand how governments, and especially our government, did not act with the necessary urgency during the waning decades of the 20th and the first decade of the 21st centuries. I use the term ‘government’ deliberately, even if saying it is a governmental responsibility risks political ostracism at this juncture in our history. While individual acts can and do make a difference, this quandary not only requires action at all levels of government, but is perhaps the quintessential international problem; individual nations simply cannot resolve this issue alone.

Some nations are investing in green technology, be it wind power or solar panels,⁹⁷ as they search for new technologies, and plan cities that

95. Greg Kahn, *The Fate of the Kyoto Protocol Under the Bush Administration*, 21 *BERKELEY J. INT'L L.* 548 (2003). Indeed, it was not just the administration of President George Bush, but the complicity of an extraordinarily reluctant Congress, which is clearly beholden to the coalition of interests arrayed against reducing GHG emissions.

96. McKIBBEN, *supra* note 68, at 13.

97. See, e.g., Zachary Shahan, *Brazil to Triple Renewable Energy by 2020 (Focus on Wind)*, *INT'L BUS. TIMES* (June 9, 2011, 12:19 PM), <http://uk.ibtimes.com/articles/20110609/brazil-triple-renewable-energy-2020-focus-wind-cleantechnica-cleantech-innovation-news-and-views.htm>; Christina Larson, *America's Unfounded Fears of a Green-Tech Race with China*, *YALE ENV'T* 360 (Feb. 8, 2010), <http://e360.yale.edu/content/feature.msp?id=2238>; Greener Tomorrow, *Best*

are not as dependent on cars as our suburbs and cities.⁹⁸ Thus, there is a measure of hope – even if Americans will be buying these technologies from others. Nonetheless, the sad reality is that America remains one of the principal sources of GHG emissions; and even if other nations drastically cut their emissions, if America does not undertake reductions,⁹⁹ the planet's climate is destined for an unknowable and most probably unwelcomed fate. Certainly, no nation is doing enough and all governments must agree to undertake much more effective measures to adequately reduce GHG emissions. I can guarantee that eventually they will do so. What I cannot say is whether they will do so in time to save us or future generations from what appears to be almost certain catastrophe.

Place to Invest in Green Energy; China, TOMORROW IS GREENER (Sept. 15, 2010), <http://www.tomorrowisgreener.com/best-place-to-invest-in-green-energy-china/>; *Focus on Greentech: A Master Plan for Germany*, GER. INVESTMENT MAG., Apr. 2009, at 10; Michael Hasper, *Green Technology in Developing Countries: Creating Accessibility Through a Global Exchange Forum*, 2009 DUKE L. & TECH. REV. 001 (2009).

98. Daniel Lerch, *A Less Car-Dependent California*, POST CARBON INST. (Sept. 22, 2008), <http://postcarboncities.net/node/3512>.

99. It must be noted that although Congress has refused to enact climate change legislation, the Obama administration has attempted to use current law to control GHG emissions and the Supreme Court has validated such efforts. *See, e.g.*, Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act, 74 Fed. Reg. 239, 66496 (Dec. 15, 2009); *Massachusetts v. Env'tl. Protection Agency*, 549 U.S. 497 (2007) (holding that the Clean Air Act authorizes federal regulation of emissions of carbon dioxide and other greenhouse gases). Moreover, there have been several state and regional initiatives to implement the Kyoto Protocol. Sherrie Gruder, *State Initiatives Supporting the Kyoto Protocol*, SOLID AND HAZARDOUS WASTE EDUC. CTR., UNIV. OF WIS. (MILWAUKEE), (Dec. 2006), available at <http://www.3.uwm.edu/Dept/shwec/publications/cabinet/energy/Kyoto12-21.pdf>.