

> The Reformation of Global Environmental Governance: Addressing the Challenge of Climate Change

By Eric W. Orts, *Guardsmark Professor at the Wharton School of the University of Pennsylvania; Faculty Director, Initiative for Global Environmental Leadership**

Kyoto is dead, and Paris has killed it. This shorthand means that the approach to global environmental problems represented by the Kyoto Protocol to address climate change has been replaced by a more decentralized method represented by the Paris Agreement. Kyoto imagined that nation-states acting together through formal international legal agreements would provide the best way forward to solve large global environmental problems such as climate change. Paris jettisoned Kyoto as unworkable, and the new agreement heralds a conceptual shift in how we as a human society frame problems of global environmental governance. It is a positive shift, and the full implications of this change for law, business, nonprofit organizations, and everyday citizens and consumers are not yet fully grasped.

President Obama often remarked that there are two large-scale existential threats to human society and our contemporary global civilization. One is the risk of thermonuclear war, an issue that remains mostly for traditional governments and statecraft to manage. The other is global climate change, which is a problem moving beyond the reach of nation-states alone to handle.¹

Climate change—or, as David Orr prefers, “global destabilization”—is the most important and largest environmental challenge in the twenty-first century.² It is well-known by all but the most economically self-interested and scientifically ignorant that climate change is real and dangerous. Perhaps the recent experiences of Hurricanes Harvey, Irma, and maybe José—along with rampant forest fires in the American West—may serve as a wake-up call to the American political right, which has become astonishingly and

frighteningly “know nothing.”³ Average global temperatures have been rising, along with average sea levels. Glaciers and polar ice have been shrinking. Extreme weather events such as flooding, drought, and heat waves have become more common and severe. You don’t need a weatherman to see which way the wind blows: just ask almost any climate scientist. If nothing serious is done, catastrophic consequences for civilization are not only likely but virtually certain: mass starvation, huge refugee flows, expansion of the geographical range of diseases, and environmentally motivated wars. Basic assumptions of human rights and democratic government in the world will also come under heavy pressure.⁴

Climate change poses an extraordinarily difficult challenge because of its scope, time-scale, and complexity. As I’ve previously argued, the Kyoto style of organizing nation-states to address climate change by a treaty or other formal “top-down” arrangement foundered on at least six problems.⁵ First, the complexity of many countries and many people with conflicting interests and values makes coming to agreement difficult. Second, the economic interests of nation-states are often in direct competition. Third, the ethics of comparative responsibility among nation-states (and among rich and poor) lead to controversies about how much those who gained from climate unfriendly practices historically should compensate those who have not benefited. Some countries are also more vulnerable to climate risks than others. Fourth, the short attention spans of most human beings do not easily engage rationally with long-term climate consequences. Fifth, the administrative means to monitor and enforce global

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standards for greenhouse gas emissions are weak. Sixth, the economic phenomenon of “leakage”—i.e., the displacement of climate unfriendly production to non-regulated jurisdictions—poses a challenge to comprehensive international regulation.⁶ In addition, we have seen slow progress, and even reversals of progress in countries such as the United States, because of general scientific ignorance, a cultural divide between scientist and policymakers, the politicization of science (and the advent of “alternative facts”), the organized denial of science, and partisan politics driven by business interests that would be affected negatively by climate mitigation policies.⁷

The Paris Agreement represents a bold new approach because of its “bottom up” rather than “top down” structure. Because each nation-state (including almost every country on the planet) has agreed to submit a plan with self-defined targets of performance, the burden is removed from experts at the “top” to construct a global regime of greenhouse gas control and technical programs for adaptation. This bottom-up approach worries experts because there can be no guarantees about overall collective progress toward effective reductions of climate-affecting emissions. But for the reasons and constraints discussed above, there is no feasible alternative.

President Trump’s ill-advised withdrawal (or, more precisely, his decision to begin legally to withdraw) the United States from the Paris Agreement may, contrary to his intentions, end up demonstrating the wisdom and strength of this bottom-up approach.⁸ Because of the decentralized and open structure of the Paris Agreement, twenty-four U.S. States (notably California) and 274 cities (including New York, among many others) have so far declared that they will nevertheless comply with the U.S. commitments to Paris made by President Obama.⁹ Many leading businesses are making the same commitment. A group called “We Are Still In” includes business signatories representing businesses and investors accounting for total annual revenues of \$1.4 trillion and over twenty of the Fortune 500 companies, such as Apple, eBay, Gap Inc., Google, Intel, Microsoft, and Nike, as well as hundreds of small businesses.¹⁰ More than 300 universities and colleges have also joined.¹¹ In other words, states, cities, and businesses—as well universities and other nonprofit institutions—are making an end-run around the Trump Administration and a recalcitrant Republican Congress.

The silver lining of Trump’s outrageous action is that it highlights the need for an “all hands on deck” approach

to dealing with large-scale global environmental challenges such as climate change. Other global environmental challenges include biodiversity loss, deforestation, loss of arable land, destruction of the ocean’s fisheries, fresh water shortages, and the spread of toxic chemicals.¹² Traditional international law has proven mostly ineffective in dealing with these problems.¹³ Paris represents a new way forward. The largest, most intractable problems require new modes of global environmental governance. Although we can only see outlines emerging, what I will call “a reformation of global environmental governance” is underway. It is a social phenomenon deserving of further thought and study, as well as steering and fine-tuning.

Global environmental governance refers to the institutional and individual capacities that affect how human interactions contribute to either causing or alleviating environmental problems, including various kinds of pollution. This definition allows for further debate about what constitutes an environmental problem. For example, one might want a particular kind of pollution to be limited to levels that are consistent only with human health standards or greater controls that would protect environmental features such as non-human animals, plants, and eco-systems.¹⁴ For purposes here, however, we can assume that climate change is a global environmental problem that requires strategies of both mitigation and adaptation.

Two important features of this conceptual reformation are important to note. First, the idea of global environmental governance goes beyond law as the method of intervention. New modes of governance are needed that recognize that “law fails” sometimes and proves inadequate to the social challenge. This does not mean that law is not important: law remains essential as part of the solution to the larger problem. But law is not enough.

Second and relatedly, global environmental governance transcends the traditional focus on the nation-state—as well as international treaties for other agreement among nation-states. Again, failures of international environmental law mean that other social institutions must play an enhanced role to address problems such as climate change.

Social theorists such as Saskia Sassen offer a vision of the emergence of “global assemblages” that include nation-states and other governing bodies (such as cities), combined with associations of firms, nonprofit organizations, and universities.¹⁵ How best to construct these assemblages for global environmental governance

is a topic for further work both in theory and everyday practice.

To begin, consider the different groups and interests that have an influence over global environmental governance: the players on the global stage. First, there are billions of individual human beings on the planet acting in their own individual roles and capacities as citizens, consumers, employees, investors, and parents. People vote and engage in politics. People also act as consumers in markets, and they work as employees in business firms that produce goods and services in markets. People make investments in financial markets for various objectives such as retirement or paying for college for their children. People raise families and engage in religious, educational, and other nonprofit institutions.

In all of these different roles, individual people can make decisions that take the natural environment into account. As citizens, individuals can “vote the environment” and support candidates who are either more or less “pro-environment” or “green.” As consumers, individuals can make decisions that contribute to different environmental outcomes. They can buy products or services that are certified or labelled to be better for the environment or “greener” than alternatives. They can also choose not to consume—or to make purchases with an eye toward environmental impact and consequences. Individuals acting as employees may become more or less active in workplace activities that promote recycling, reuse, or redesign. Individuals may seek to work for firms that pursue a more positive sustainability objective than other firms. Individual investors may choose to invest in an increasing number of institutional funds that are negatively and sometimes positively screen for the environmental performance. (For example, a negative screen may exclude coal companies, and a positive screen may encourage investment in renewable technologies such as solar and wind energy). Parents may even decide to limit the number of children that they beget because of environmental considerations.¹⁶

Although individuals can act in these ways in a manner that will have an aggregate positive effect on global environmental problems, however, their actions are not coordinated. The environmental benefits are therefore uncertain. Environmentally beneficent activities by one person may be offset—or more than offset—by environmentally destructive actions by another. Hence the need for more organized institutional responses.

The second main player is government which, in different forms and at different levels ranging from the local to the

national and even the supra-national (e.g., the European Union), instantiates the traditional institution deemed most appropriate to address environmental problems. The classic solution to the “tragedy of the commons,” which results when many individual people act primarily with only their own self-interest in mind, even when such actions conduce to predictable collective damage, is to resort to government. In Garrett Hardin’s classic formulation, we sometimes need “mutual coercion, mutually agreed upon.”¹⁷ Surely, governments and laws promulgated by them remain necessary and are often the most efficient and effective method to address many environmental problems. In addition, the European principle of “subsidiarity” recommends that any particular environmental problem should be addressed at the lowest level possible to resolve it effectively and efficiently.¹⁸ A dispute about what kinds of trees to plant on my block, for example, is likely best resolved at the micro-level of informal governance by my neighbors and fellow homeowners, rather than by a higher level of government at the city, state, or federal level (unless, perhaps, an invasive or endangered species is involved). But disputes involving various kinds of pollution are likely best resolved at higher levels of government. The larger point is that government and law are the best solutions for many kinds of environmental problems, but not all.

“Market failures” are a common and frequent justification for governmental regulation. But “government failures” are also possible. Perhaps they are even increasing in some countries recently, such as the United States, where political dysfunction appears to be freezing effective government action. In these kinds of situations, government is not the best solution to environmental problems. Decentralized approaches have emerged and been recognized too. Elinor Ostrom, for example, won a Nobel Prize in Economic Sciences in significant part for her theoretical and empirical work showing that human communities that have come together to solve different kinds of tragedies of the commons without direct government intervention and supervision.¹⁹ Her research holds out the promise also that the global challenge of climate change may prove amenable to broad-based collective and decentralized governance efforts.²⁰

Governmental regulation can support decentralized approaches. Rather than directly prescriptive command-and-control styles of regulation, government can adjust property rules, incentivize environmentally positive behavior through taxes or charges, require or encourage the provision of information, require or encourage insurance, or adopt pro-environmental procurement

policies.²¹ What works best in different kinds of situations will depend on assessments of experiments and other measures of effectiveness and efficiency.

Non-governmental organizations (NGOs) are a third major institutional player on the global stage.

Organizations such as the World Wildlife Fund, the Sierra Club, Greenpeace, and the Natural Conservancy have global footprints in terms of power and influence. Usually growing from local or national origins, these organizations have grown to become increasingly concerned with global-scale problems, including biodiversity loss (with an impetus especially provided by “charismatic” endangered species such as pandas, tigers, and elephants).²² They work with governments and local populations seeking solutions, and they often attempt galvanize support for social pressure against business interests too, such as in famous actions against whaling ships. They tie charitable fundraising from individuals to proactive strategies to influence governments and businesses to take actions for environmental preservation or improvements of environmental performance. They may engage in political lobbying and consumer boycotts. Other related nonprofit organizations add to this category, including universities and colleges as well as religious orders. NGOs of many different stripes and colors are an essential and the as yet incompletely theorized and understood set of organizational players active in Sassen’s “global assemblages.”

Business firms constitute a fourth major player. Business has often been seen primarily as a target for either prescriptive regulation or NGO pressure (by social shaming or consumer boycotts). Increasingly in the last several decades, however, calls have been made on business to be part of the solution rather than part of the problem.²³ Despite pressure from investors for maximizing returns, traditional fiduciary duties of corporate managers and directors allow for environmental objectives to be taken into account.²⁴ Family businesses in particular may have generational incentives to take long-term environmental concerns seriously. New legal forms of business enterprise such as benefit corporations in the United States and community interest companies in Europe specifically expand their objectives to include environmental sustainability as well as profit-making.²⁵ Legal strategies may aim to encourage business firm to reflect on their environmental performance and make decisions to enhance it, such as through voluntary or mandatory reporting schemes—or what I’ve previously called “reflexive environmental law.”²⁶ Businesses themselves have also been proactively adopting internal “private governance” strategies and structures that address

environmental performance considerations without direct governmental interventions.²⁷

International organizations comprise a fifth major player in the global environmental governance. The United Nations, the World Trade Organization, and the World Bank are leading examples of international institutions that are formally organized by treaties among nation-states. A broad conception of global governance displaces these organizations from the central stage to some extent, just as nation-states themselves are also de-centered. They remain important and essential, however, as the negotiation of the Paris Agreement itself illustrates.

The key global governance question is how all of these players can work together to make true progress. I will conclude with a few thoughts about future directions. In thinking about possible future strategies, though, one must become comfortable with the prospect of uncertainty in terms of consequences. Because traditional legal prescription cannot work at a global level, other less direct methods must be employed. I’ve previously developed the metaphor of many different “climate contracts” to describe how many different kinds of human activities and interactions among the players identified above can contribute to long-term solutions. There will be a continuing need for scientists and policymakers to observe and determine what works and what doesn’t. Different players will play different roles. For example, international groups such as the Intergovernmental Panel on Climate Changes will continue to prove indispensable in terms of organizing and interpreting scientific research. Nation-states must continue to engage in legal reviews and reforms, such as to provide new energy networks and to support new energy sources that will allow for long-term mitigation through a phasing out of reliance on fossil fuels. Business must continue to innovate and invent “win-win” solutions that are both profitable and climate friendly (or at least climate neutral). Perhaps most important, individual citizens and consumers must remain active, organized in social movements, and collectively supportive of environmental NGOs. If enough individual people do not understand and care about the threats of climate change, then the current dangerous path toward taking ever greater risks will continue. And human society as a whole will inexorable march over a cliff into a dystopia of one kind or another imagined by climate fiction novelists.²⁸

In thinking about creative solutions to the challenge of global environmental governance, we should follow the classical advice of John Dewey. Each instance of creative thinking, according to Dewey, “reveals, more or less

clearly, five logically distinct steps: (i) a felt difficulty; (ii) its location and definition, (iii) suggestion of possible solution; (iv) development by reasoning of the bearings of the solution; and (v) further observance and experimentation leading to its acceptance or rejection...”²⁹

With respect to the reformation of global environmental governance with respect to climate change, we should follow Dewey’s advice.

- The science of climate change reveals the “felt difficulty” of both the complex dimensions of the problem and its consequences on human society and our natural environment in terms current damage and expected future damage.
- The “location and definition” of the problem of climate change is regional and specific in terms of its effects and risks (e.g., rising seas and storm surges on the coasts as compared with the risks of forest fires, flash floods, and droughts in interior locations). But it is global in the analysis of its overall systemic dynamics and sources of causes.³⁰
- “Suggestions of possible solutions” involves complex governance regimes. No single top-down regulatory solution is feasible, and inaction and blind faith in markets are misguided too. Instead, various individual and institutional players on the global governance stage must play different roles in an aggregated set of solutions. For example, international organizations, nation-states, and universities must continue to sponsor basic scientific as well as practical research focused on climate change. Creative legal regimes must be adopted at different levels, taking into account political feasibility as well as ideal considerations of effectiveness and efficiency. Individual and NGOs must continue engage in mass social movements that will educate and deepen commitment to change both politically as citizens and economically as consumers, employees, and investors. Business firms must orient themselves not only to improve environmental performance in line with profit motives, but also add their institutional weight to political and legal reforms that will provide incentives and a level playing field for positive change. Business must also innovate, invent, and disseminate new sustainable technologies that will drive out and replace climate-polluting ones. In addition to their individual roles, these various players with different incentives and interests must join together into new hybrid “global assemblages” coordinating similar interests. For example, global NGOs must continue to partner with businesses and governments to achieve

specific conservation goals and policy outcomes. Cities and regional governments (such as state in the U.S.) must continue to partner together—as well as with forward-thinking business firms and NGOs—to advance climate friendly practices and policies. Nation-states must continue to work to improve their policies under the bottom-up rubric of the Paris Agreement—and other global players must continue to participate actively in the Paris regime as well. Benign geoengineering solutions (such as reverse photosynthesis and other methods of carbon recycling and sequestration) must also be pursued, perhaps through complex governance partnerships.³¹

- The solutions of global environmental governance for climate change is messy and complex, but it is the only way forward. The “development by reasoning of the bearings of the solution” should be brought to bear to weed what actually works to “move the needle” in terms of mitigation and adaptation from what is wasteful or relatively ineffective or inefficient compare with alternatives.
- “Further observance and experimentation leading to [the] acceptance or rejection” of various environmental governance methods and practices are required. In other words, there is no easy or static final solution to global climate change. Monitoring of success and failure will be needed. A constant and reflexive pattern of trying out new experiments, and then determining whether they work or not, will characterize an ongoing reformation of the global environmental governance of climate change for the foreseeable future. For global climate change is not a problem that will be solved any time soon.

Finally, even though the challenges of reforming the complex approaches of environmental governance to climate change will be difficult and complex, it is essential also to remain optimistic. Although the future may often appear dark, and though it is quite possible that many more climate-change super-charged events will occur in the near future—from more Category 5 hurricanes to massive forest fires to terrible droughts—humanity will as a whole will likely survive the challenge as a species. As the astrophysicist David Grinspoon observes after a careful and comprehensive study: “Climate disruptions could make the twenty-first century as bad as the twentieth century, with its tragic famines and world wars that uprooted massive regions and cost hundreds of millions of lives, but it will not mean the end of our civilization. It may be the beginning.”³² For as Martin Seligman, the guru of positive psychology, preaches, optimism is functional.³³

ENDNOTES

- ¹ This reference comes from a recent off-the-record interview with a person familiar with President Obama's daily briefings in the Oval Office. Cf. also Thomas L. Friedman, "Trump's Folly," *N.Y. Times*, Sept. 13, 2017, at A27 (describing the risks of nuclear war such as with North Korea and the risks of global climate change suggested by Hurricanes Harvey and Irma as two leading national security threats).
- ² David W. Orr, *Down to the Wire: Confronting Climate Collapse 2-4* (2009). For a defense of the term "climate change" as opposed to other options such as "global warming," see Stephen M. Gardiner, "Ethics and Global Climate Change," 114 *Ethics* 555, 557-59 (2004).
- ³ See David Roberts "As Hurricanes and Wildfires Rage, U.S. Climate Politics Enters the Realm of Farce," *Vox*, Sept. 7, 2017, available at <https://www.vox.com>.
- ⁴ See David Roberts "As Hurricanes and Wildfires Rage, U.S. Climate Politics Enters the Realm of Farce," *Vox*, Sept. 7, 2017, available at <https://www.vox.com>.
- ⁵ Eric W. Orts, "Climate Contracts," 29 *Virginia Environmental Law Journal* 197 (2011).
- ⁶ *Id.* at 205-14.
- ⁷ For an examination of these and other obstacles written prior to the most recent illustrations in the Trump campaign and following administration, see Dale Jamieson, *Reason in a Dark Time: Why the Struggle Against Climate Change Failed—and What It Means for Our Future* 61-104 (2014).
- ⁸ As of this writing, it appears that Trump Administration officials are reaching out to find a path back to the Paris Agreement. In a letter to the United Nations, the White House signaled that it only "intends to exercise its right to withdraw from the agreement," and hinted that finding "suitable terms for re-engagement" was possible. Under the terms of the Paris Agreement, no country can formally withdraw until 2020. Lisa Friedman, "White House Adviser to Discuss Climate Change at U.N.," *N.Y. Times*, Sept. 13, 2017, at A7.
- ⁹ Michael Greshko, "Map Shows Growing U.S. 'Climate Rebellion' Against Trump," *National Geographic* (June 8, 2017), available at <http://news.nationalgeographic.com/2017/06/states-cities-usa-climate-policy-environment/>.
- ¹⁰ *Id.* See also "We Are Still In," available at <http://wearestillin.com/>.
- ¹¹ *Id.*
- ¹² James Gustav Speth, *The Bridge at the End of the World: Capitalism, the Environment, and Crossing from Crisis to Sustainability* 19-39 (2008).
- ¹³ Tseming Yang and Robert V. Percival, "The Emergence of Global Environmental Law," 36 *Ecology Law Quarterly* 615 (2009).
- ¹⁴ Clean Air Act regulation in the United States makes this kind of distinction.
- ¹⁵ Saskia Sassen, *Territory, Rights, Authority: From Medieval to Global Assemblages* (2006).
- ¹⁶ Bill Mckibben, *Maybe One: A Personal and Environmental Argument For Smaller Families* (1998).
- ¹⁷ Garrett Hardin, "The Tragedy of the Commons," 162 *Science* 1243, 1247 (1968).
- ¹⁸ For an overview, see, e.g., George A. Bermann, "Taking Subsidiarity Seriously: Federalism in the European Community and the United States," 94 *Columbia Law Review* 331 (1994). For an economic interpretation, see also Aurélian Portuese, "The Principle of Subsidiarity as a Principle of Economic Efficiency," 17 *Columbia Journal of European Law* 231 (2011). For an examination including political and moral dimensions, see Markus Jachtenfuchs and Nico Krisch, "Subsidiarity in Global Governance," 79 *Law & Contemporary Problems* 1 (2016).
- ¹⁹ See, e.g., Elinor Ostrom, *Governing the Commons: The Evolution of Institutions for Collective Action* (1990).
- ²⁰ See Elinor Ostrom, "Polycentric Systems for Coping with Collective Action and Global Environmental Change," 20 *Global Environmental Change* 550 (2010).
- ²¹ For a typology of regulatory choices, see Sarah E. Light and Eric W. Orts, "Parallels in Public and Private Environmental Governance," 5 *Michigan Journal of Environmental and Administrative Law* 1, 23-53 (2015).
- ²² For accounts of the origin and growth of large environmental NGOs in the United States and elsewhere, see, e.g., Paul Hawken, *Blessed Unrest: How The Largest Social Movement In History Is Restoring Grace, Justice, And Beauty To The World* (2007); Kirkpatrick Sale, *The Green Revolution: The American Environmental Movement, 1962-1992* (1993).
- ²³ For a classic appeal for business reform along these lines, see Paul Hawken, *The Ecology of Commerce: A Declaration of Sustainability* (rev. ed. 2010).
- ²⁴ See, e.g., Eric W. Orts, "Beyond Shareholders: Interpreting Corporate Constituency Statutes," 61 *George Washington Law Review* 14 (1992).
- ²⁵ For an overview of "social hybrid enterprises" including benefits corporations and other similar forms, see, e.g., Eric W. Orts, *Business Persons: A Legal Theory of the Firm* 206-15 (rev. paper ed. 2015).
- ²⁶ Eric W. Orts, "Reflexive Environmental Law," 89 *Northwestern University Law Review* 1227 (1995). See also Cary Coglianese and David Lazer, "Management-Based Regulation: Prescribing Private Management to Achieve Public Goals," 37 *Law & Society Review* 691 (2003); Dennis D. Hirsch, "Green Business and the Importance of Reflexive Law: What Michael Porter Didn't Say," 62 *Administrative Law Review* 1063 (2010). For an original exposition of the general idea, see Gunther Teubner, "Substantive and Reflexive Elements in Modern Law," 17 *Law & Society Review* 239 (1983).
- ²⁷ See Michael P. Vandenbergh, "Private Environmental Governance," 99 *Cornell Law Review* 129 (2013). See also Light and Orts, *supra* note 21.
- ²⁸ See *supra* note 4 and accompanying text.
- ²⁹ John Dewey, *How We Think* 72 (1910).
- ³⁰ Elements (i) or (ii) taken together comprise what I have previously described with a co-author as "the problem context and problem features" of an environmental problem. It includes both a scientific description of the problem as well as a diagnosis of the social consequences and situations that further describe the practical aspects of the problem. Paul R. Kleindorfer and Eric W. Orts, "Informational Regulation of Environmental Risks," 18 *Risk Analysis* 155, 167-68 & fig. 4 (1998).
- ³¹ For a discussion of geoengineering options (arguing also for different terminology), see Jamieson, *supra* note 7, at 1219-27.
- ³² David Grinspoon, *Earth in Human Hands: Shaping Our Planet's Future* 471 (2016).
- ³³ See Martin E.P. Seligman, *Learned Optimism: How To Change Your Mind and Your Life* (1991); Martin E. P. Seligman, *Flourish: A Visionary New Understanding of Happiness and Well-being* (2011). Cf. also John R. Ehrenfeld and Andrew J. Hoffman, *Flourishing: A Frank Conversation About Sustainability* 119-36 (2013) (arguing that though the challenges of achieving a social transformation toward true sustainability will be very difficult, one must remain "hopeful").