The Challenge of a New Environmental Contract

By Eric W. Orts*

[For discussion at the 2007 U.N. Secretary-General's Global Colloquium for University Presidents]

The challenge posed to human society by global climate change caused by the release of the greenhouse gases (GHGs) is important, but it is also in my view only one of a set of environmental problems that signal the need for a fundamental shift in policy and institutional approaches. Climate change is a truly global problem because it is caused by the combined activities of everyone on the planet (as well as natural causes such as solar cycles and volcanic activity) and produces effects that are detrimental through global geophysical vectors. It is not, however, the only such problem. Two others are the depletion of the ozone layer through the release of inadvertently harmful industrial chemicals (i.e., chloroflourocarbons and their cousins) and the massive loss of biodiversity in what has been described as the "sixth great extinction" in geological time (the last one occurring when an asteroid hit the planet 65 million years ago to end the age of dinosaurs). Widespread deforestation, desertification, water shortages, depletion of life in the oceans, and human population growth are also compelling global problems.

The most distinctive features of the newest global environmental problems are the scale and stakes involved. They are systemic problems of an industrial civilization that has proven immensely successful technologically in the last few millenia in terms of advancing the material foundations for the survival and multiplication of the human species. At the same time, it is not alarmist to point out the increasing probability of a collapse of the environmental prerequisites for human survival as a species. Evidence is accumulating that human societies in the past have sometimes outrun the natural processes needed for long-term sustainability – or, more directly, survivability.[1] China exhibits a contemporary example of a society running the substantial risk of sacrificing its long-term environmental viability for relatively short-term economic gains.[2] The problems of climate change and its apocalyptic siblings raise the possibility that humanity has become large and powerful enough to destroy the natural foundations of its own existence – perhaps inadvertently and on a global scale.

Universities and colleges as primary centers of learning and the production of knowledge should play a central role in addressing this new global environmental challenge. In doing so, it may be useful for them to conceive of themselves as partners acting with other major institutions in an imaginative "environmental contract" (replacing or supplementing the theoretical idea of a

---

* Guardsmark Professor, The Wharton School, University of Pennsylvania. I thank my Penn colleagues, Bob Giegengack and Howard Kunreuther, for comments and discussion.

[1] Jared Diamond, *Collapse: How Societies Choose to Fail or Succeed* (Viking 2004)

[2] Elizabeth Economy, "The Great Leap Backward? The Costs of China's Environmental Crisis," *Foreign Affairs*, Sept.-Oct. 2007, pp. 38-59.

"social contract").[3] It is also important for academia to retain a commitment to scientific and scholarly objectivity, even when dealing with large and important social issues, and to explore alternative approaches to problems, rather than to advocate a particular political or legal approach when there are reasonable competing perspectives.

The first priority, in my view, is for academic institutions to commit to making research and teaching about global environmental issues a very high priority. This is not suggested as an excuse for political inaction. The truth is that global climate change and many other large-scale environmental problems are complex, and many features of them are not known with scientific accuracy and certainty. One outcome of this colloquium that I would recommend is a renewed commitment to the "hard science" research needed to further understand not only the dynamics of global climate change and human influence on it – but other related topics. For example, it has not yet been established conclusively whether incremental global warming has increased the frequency and severity of hurricanes.[4] The invention of environmentally beneficial technologies is another essential task for scientific and engineering research to tackle. In addition, economic aspects of many of these problems are important and not yet well comprehended on a practical, empirical level. The topic of climate change highlights a need for interdisciplinary research and teaching initiatives. A potential recommended action would be to make teaching "ecological literacy" a priority on campuses.[5]

Second, creative thinking in the humanities and social sciences is needed concerning the philosophical, political, legal, and cultural dimensions of global-scale environmental problems. In my view, new legal approaches are required that go beyond traditional command-and-control and market-based solutions. The mechanisms of international law have proven spectacularly ineffective in addressing many difficult global problems. Treaties to address climate change and biodiversity loss have failed (and not only because the United States has not joined strongly in the efforts). I am less sanguine than Prof. Stewart that the usual legal approaches are feasible as solutions. Market-based versions of command-and control regulation work well for some kinds of problems, including the U.S. acid rain trading program (for which Prof. Stewart deserves a large measure of credit). In comparison, however, global GHG emissions present an almost infinitely increased number of dispersed and disparate sources. Another large issue is the lack of institutional political and legal capacity in many countries to address even the most basic, local environmental challenges. It may be necessary to reconsider the viability of historical nation-state boundaries in an era of globalized problems and global institutional players (including

---

[3] Cf. Michel Serres, *The Natural Contract* (MacArthur and Paulson trans.) (University of Michigan 1995).

[4] See Cordelia Dean, "Will Warming Lead to a Rise in Hurricanes?" *N.Y. Times*, May 29, 2007, at C1 (reviewing recent research).

[5] See, e.g., David W. Orr, *The Earth in Mind: On Education, Environment, and the Human Prospect* (Island 1994).

business corporations and non-profit organizations). In my view, new practical variations of what might be called "environmental contracts" should be considered seriously as philosophical, political, legal, and cultural alternatives.[6] Broad coalitions of states, non-profit organizations (including academia), business enterprises, consumer groups, citizens and political parties, and religious organizations are needed to address new global issues. Perhaps the most intractable and destructive feature of the global landscape impeding solutions for many environmental problems is the massive and widening socio-economic gap that divides the rich and poor regions of the world – and the absence of any real evidence of the international will to address it.

Specific Responses to Professor Stewart's Questions

Beyond Kyoto: The Kyoto Protocol was destined to fail as soon as it was agreed upon without the participation of some of the largest and most influential nation-states, including the United States, China, and India. (As Prof. Stewart notes, four of the six largest GHG emitting countries are not parties.) A good analogy is a peace treaty that did not include some the belligerent states in conflict. Again, I am skeptical that global climate change is amenable to traditional methods of treaty-making. The regulatory agenda envisioned by Prof. Stewart makes several problematic assumptions: (1) an ability to measure actual GHG emissions accurately and efficiently on a global scale (with "leaks" likely to be the rule rather than the exception); (2) the existence of legal and political systems in many of the world's nation-states approximating those in rich "developed" countries (when in fact institutional capacity lags in many countries, including China); and (3) the assumption that market-based trading mechanisms that may work well for problems of a few hundred polluting sources, such as in the U.S. acid rain permit trading scheme, can be scaled up for GHG emissions without an unacceptable increase in transaction costs and unworkability (including inaccurate reporting and political corruption).

My suggestion would be to start from scratch with (1) a redefinition of the problem of global climate change, including an updated diagnosis of its various dimensions and emphasizing its interactions with other major environmental problems, (2) a recognition of the need to include all major emitting nation-states (and other institutional entities) in any proposed international treaty-based solutions, and (3) an openness to the role that non-traditional methods of regulation and non-legal coordination may play, such as enhancing the disclosure of information, stimulating new "green" technologies, and building broad-based coalitions among companies, consumers, citizens, and non-profit organizations. The reform of regulatory bodies, including the World Trade Organization and perhaps even the establishment of a World Environmental Organization, might also be considered.[7]

---

[6] *Environmental Contracts: Comparative Approaches to Environmental Regulation in Europe and the United States* (Kurt Deketelaere and Eric W. Orts eds.) (Kluwer 2001).

[7] See, e.g., *A World Environmental Organization: Solution or Threat for Effective International Environmental Governance?* (Frank Biermann and Steffan Bauer eds.) (Ashgate 2005).

Economic incentives and engaging poor countries: Mitigation and adaptation costs are estimated to be very large. An additional problem is that economic benefits of mitigation and adaptations are relatively long-term (returns on present investments expected to be mostly delayed into future generations and measured by the reduction of catastrophic risks rather than in positive amenities). In my opinion, policies should be tied as much as possible to the creation of economic incentives, but there will also be significant economic pain. Poor countries in particular have no persuasive reason to opt in to a growth-hampering climate regimen without significant economic incentives to do so. Investments in new technology and its transfer internationally may be one of the best and most effective uses of limited government funds needed to address this issue.[8]

Domestic versus international approaches: Perhaps a good first step is to enhance measurement and disclosure, such as in undertaken in the Carbon Disclosure Project by some of the world's leading investment firms and business enterprises.[9] Many dimensions of the climate problem, however, are not currently subject to systematic, continuous, or accurate measurement.

With respect to domestic regulation, as long as several major economic players that represent huge swaths of the planet refuse to participate, then enormous economic "leaks" in the form of massive transfer payments (resulting in increased emissions) will flow to business enterprises and people in China, India, Brazil, Indonesia, and other non-regulated parts of the world. Global climate change presents an example of the well-known "tragedy of the commons." Any effective domestic approach should therefore be calibrated to respect the international size of the problem. Demand for climate-unfriendly products or processes in regulated countries will most likely be supplied by trade with countries without such restrictions. Any domestic regulation should take into account the fact that today the operations of the global economy cannot be easily controlled by nation-states. Subsidizing climate-friendly business and technology in poor parts of the world may prove more successful than attempting to control and reduce their GHG emissions by legal, political, or (heaven forbid) military force.

Adaptation: Given my somewhat pessimistic view that the political will is lacking to take the steps necessary to mitigate global climate change (and given that even reversing course today would not avoid harm), adaptation is very important. New sea wall technology, tropical disease control, and agricultural innovation (perhaps including aquaculture and nontraditional farming techniques) are three candidates that come to mind as potentially important. A number of other measures can be taken to respond to damage expected from rising global temperatures. Rising sea levels, for example, suggest that incentives for human settlements near the coasts should be discouraged. A low-hanging fruit that should be plucked: eliminate federal guarantees for flood insurance for new developments on U.S. coasts. Government capacity for emergency responses and insurance policies for long-term risks could be improved. Immigration policies might also

---

[8] For an interesting sample of recent views of economists, see the special issue on global climate change in *The Economists' Voice*, vol. 4, issue 3 (June 2007).

[9] See Carbon Disclosure Project, http://www.cdproject.net/.

be reconsidered given predictions of the disparate environmental and economic effects of climate change in different parts of the world and likely future migration patterns.

Public attitudes: Global environmental issues demand scientific literacy and knowledge to understand. Education is therefore highly important at all levels. Creative media approaches might be especially helpful: for example, weather reports that include larger environmental dimensions (already done in many cities reporting on air quality). A colleague once expressed the view that fashion and lifestyle changes are necessary to drive environmental consciousness and public policies forward, and these sorts of cultural considerations are at least relevant.

Private businesses: Private companies respond primarily to economic incentives. They may be enlisted proactively in creative partnerships with NGOs and governments that promise benefits to reputation and good will (e.g., employee morale, brand recognition, and green consumer appeal). Carrots as well as sticks can be used as inducements, such as environmental labels, awards, and even special regulatory treatment for demonstrably "good" companies.[10]

Geoengineering: Given the gravity of the problem and the likelihood that mitigation efforts will not be sufficient, geoengineering ideas should be explored as potential alternatives. Those who argue against researching these options seem to express technophobic views rather than rational assessments of the comparative risks and alternatives. At the same time, the risks of unintended consequences of this sort of intervention could be large and potentially irreversible.[11]

Arctic development: If possible, the resources made available by the melting of the polar ice cap should be used to for the benefit of a global sustainable development plan with a focus on cost-effective interventions that pursue various objectives. Perhaps an international consortium of countries, companies, and other institutional entities could develop the economic resources and distribute a portion of the financial gains to fund selected high-impact intervention projects, such as preservation of forests and oceans, investments in green technology, and scientific research and verification of industrial GHG emissions and other causes (e.g., methane releases, oceanic and atmospheric dynamics, etc.) and consequences of climate change.

November 5, 2007

---

[10] I describe this idea as a "reflexive" approach to environmental regulation. Eric W. Orts, "Reflexive Environmental Law," 89 *Nw. U. L. Rev* . 1227 (1995). See also Cary Coglianese and David Lazer, "Management-Based Regulation: Prescribing Private Management to Achieve Public Goals," 37 *Law & Society Rev.* 691 (2003).

[11] A current member of the U.S. EPA has expressed a favorable view of geoengineering as a likely solution. Alan Carlin, "Global Climate Change Control: Is There a Better Strategy Than Reducing Greenhouse Gas Emissions?" 155 *U. Penn. L. Rev.* 1401 (2006).