

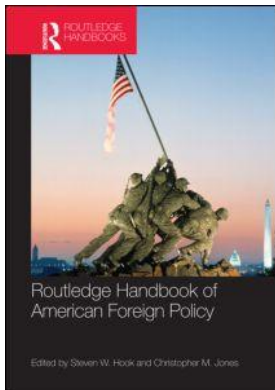
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## Environmental Policy

*Michael E. Kraft*

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### Introduction

At what was widely anticipated to be one of the most important international meetings in decades, with profound implications for the world's future, representatives of 193 nations met in Copenhagen, Denmark, in December of 2009 to approve a new treaty on global climate change. Yet, after some two weeks of prolonged and often intense negotiations, the results fell well short of the delegates' expectations. No agreement could be reached on a treaty to curb the release of greenhouse gases linked to climate change, in part because neither the United States nor China, the world's two largest emitters of greenhouse gases, would commit to a specific set of goals and deadlines. Indeed, despite promises to the contrary, neither nation provided the leadership that is essential to securing agreement from other nations.

In the end, delegates to the United Nations Climate Change Conference agreed to a what was termed the Copenhagen Accord, a three-page statement drafted by five key nations—the United States, China, Brazil, India, and South Africa—and presented to the conference membership. The accord is not legally binding and does not commit the countries to agree on what they should do next to replace the 1997 Kyoto Protocol, which was slated to end in 2012. Nonetheless, President Barack Obama hailed the Copenhagen Accord as “an unprecedented breakthrough” while most of the delegates left Denmark sadly disappointed with the meager product of their deliberations. European delegates were particularly unhappy because the failure to adopt a comprehensive agreement left them standing alone, with the only binding regime in the world for control on greenhouse gases.

As one journalist (Broder 2009: A10) put it, the accord “did not meet even the modest expectations that leaders set for this meeting, notably by failing to set a 2010 goal for reaching a binding international treaty to seal the provisions of the accord.” Nor did the plan commit either industrialized or developing nations to firm targets for emissions reductions. With such fundamental limitations, why was the accord still thought to be important? Because at least it codified the commitments of individual nations to do *something* about their release of greenhouse gases, and it reflected a modicum of responsibility to take action. This is not much, but it is a partial foundation on which to build future negotiations and eventually to formulate a meaningful agreement to act on global climate change. The accord also established a system for monitoring emissions and for reporting progress toward national goals, and it called for rich nations to contribute hundreds of billions of dollars to those nations that are most at risk

from a changing global climate. By February of 2010 most major nations followed through on the agreement by pledging in various ways to reduce their emissions by 2020 (Broder 2010).

The role that the United States played behind the scenes of the Copenhagen meeting, evident in the president's comments at the meeting as well as in the extensive though quiet negotiations between the United States and China throughout 2009, speaks to an important shift in foreign policy over the past four decades. Environmental and energy issues are no longer relegated to a small coterie of specialists in the back hallways of the State Department, as was true for decades. Nor are the problems today thought to be of little consequence in comparison to the grand issues of national security, international trade, foreign economic assistance, and other well-established domains of foreign policy. Increasingly, environmental conditions and the availability of natural resources such as energy, agricultural land, minerals, water, and forests are seen as major determinants of the world's path toward a sustainable economic development that will affect the quality of life for billions of people around the world. For these reasons, they are now widely recognized as integral components of contemporary international relations as well as efforts to promote national security (see DeSombre 2002; O'Neill 2009; Axelrod, VanDeveer, Matthews 2010; and Downie 2011). By extension, few would question that they ought to be one of the central concerns in U.S. foreign policy in the coming decades.

This chapter examines the nature of environmental and energy challenges that the United States and world face, places them within the rich tradition of scholarship and analysis of U.S. foreign policy and international relations, and sets out an agenda for future research that might improve understanding of the problems that are faced and lead to more effective public policy responses to them. As the example of climate change suggests, dealing effectively with environmental and energy problems will be no easy task. Success will require much stronger political leadership than has been evident to date, an improved capacity for policy making on a new generation of environmental and energy issues, and a far greater level of cooperation among nations than seen in recent decades. Research that can clarify the conditions for successful foreign policy and effective international agreements on these challenges could assist policy makers as they search for more effective policy tools and lay the groundwork for the international environmental policies to come.

## **Environmental and Energy Challenges in the Twenty-first Century**

As the struggle in recent years to develop a U.S. national climate change policy suggests, there is considerable misunderstanding of global environmental trends and their consequences among both the American public and policy makers (DiMento and Doughman 2007; Guber and Bosso 2010; Selin and VanDeveer 2010). Both national and global surveys have shown a high level of public concern for the environment for nearly two decades, and at comparable levels in both developed and developing nations (Dunlap, Gallup, and Gallup 1993; Dalton 2005; Dunlap and York 2008). Yet the public is rarely well informed about environmental issues, and these issues tend to be of low salience most of the time. Public ambivalence is particularly notable for those problems, like climate change, that are less visible, more abstract, and more distant in their effects than those environmental threats that people can readily see around them, such as air and water pollution.

What is the nature of these new global problems? It is not easy to summarize them although over the past two decades numerous reports have laid them out for the public and policy makers to consider, and hundreds of scientific studies and assessments continue to be published annually. Such reports are issued by United Nations agencies, international scientific bodies such as the Intergovernmental Panel on Climate Change (IPCC), the U.S. National Academy

of Science, and many other reliable and often authoritative sources. Collectively they have described in some detail the multiple threats to global environmental systems attributable to human population growth and rapid economic development, such as adverse impacts on the world's water supply, air quality, agricultural productivity, oceanic and fresh water fisheries, forests, and critical habitats and ecosystems, as well as the earth's biogeochemical cycles on which life depends, such as the climate regulation system (Hempel 1996; Brown 2008; Chasek, Downie, and Brown 2010; Axelrod, VanDeveer, and Downie 2011).<sup>1</sup>

One notable study, for example, the Millennium Ecosystem Assessment of 2005, concluded that 60 percent of critical ecosystem functions are being degraded by human activities. The same study found that about half of the urban population in Asia, Africa, and Latin America suffers from diseases associated with inadequate water and sanitation, leading to some 1.7 million deaths a year. Without greater commitment to alleviating poverty, for example by working toward the U.N. Millennium Development Goals, environmental and public health, conditions like these are likely to deteriorate further (Millennium Ecosystem Assessment 2005; United Nations 2007).

Or consider climate change, largely traceable to heavy reliance on the use of fossil fuels in addition to extensive deforestation and other human activities. The IPCC reports and those by others suggest severe impacts as the twenty-first century advances, even if most of the anticipated effects have yet to occur. Scientists forecast a doubling of carbon dioxide levels in the atmosphere over the next 100 years, the consequences of which likely include a climate that is warmer and wetter, with rising sea levels, significant risks of abrupt and unpredictable shifts in weather patterns, and extreme events such as droughts, floods, and more severe tropical storms. Among other effects, there could be catastrophic consequences for agriculture and thus for the food supply, and major risks to ecosystem integrity and biodiversity as well as to human health. Many of the worst impacts would be particularly prevalent in developing nations (DiMento and Doughman 2007; IPCC 2007; Selin and VanDeveer 2010).<sup>2</sup>

To make matters worse, human activities that affect ecosystems and the earth's climate are likely to increase substantially over the next 50 to 100 years without major changes in societal values and public policy. For example, the world's population, at 6.8 billion in early 2010, is expected to rise to about 8.0 by 2025 and 9.4 billion by 2050. While China and India have far larger populations than the United States, the U.S. impacts on global resource use, emissions of greenhouse gases, and release of toxic and hazardous chemicals are likely to be higher because of the nation's affluence and reliance on polluting technologies (Tobin 2010). Still, most of the anticipated population growth (over 95 percent) will be in developing nations, and the impacts on land use, agriculture, and water and other natural resources will be most evident there. For example, with rising population and growing human needs, the world demand for water is expected to double in the next fifty years (Dugger 2006).

Demand for energy is a case in point. Energy needs are currently met largely (about 86 percent) by using fossil fuels such as coal, oil, and natural gas, and, despite concerns over climate change, their use is expected to grow exponentially for years because of population growth and economic development. The Department of Energy (DOE) anticipates by 2030 there will be an increase of 50 percent from 2005 base levels. Total energy demand in less developed countries—that is those not affiliated with the Organisation for Economic Co-operation and Development (OECD)—will likely increase by about 85 percent compared to an increase of 19 percent in OECD countries (U.S. DOE 2008). In its 2009 annual World Energy Outlook, the International Energy Agency (IEA) forecasted that global electricity demand alone would rise by 76 percent by 2030, much of it generated by burning coal. The IEA anticipated a continuing growth in use of coal for such purposes despite its obvious implications for climate change and its potential to worsen air pollution in urban areas, and thus adversely affect human health. Similarly, it saw oil consumption increasing modestly over the next several decades.

Beyond whatever concerns such evidence may prompt, the world also faces glaring issues of inequity in the distribution of environmental risks and the benefits, such as access to clean air and water, sanitation, adequate food and shelter, and essential health care services. As has long been the case, the richest one-quarter of the world's nations controls about 75 percent of global income and consume a disproportionate share of the world's meat and fish as well of its energy, paper, chemicals, iron, and steel. They also generate more than 90 percent of the world's hazardous and industrial waste (Brown 2008; Tobin 2010). High rates of poverty continue in Latin America, Africa, and Asia without much chance of short-term improvement in the situation despite an array of international commitments intended to alleviate such conditions, including Agenda 21, approved at the 1992 Earth Summit, and the Millennium Development Goals, approved in 2000 and aimed to sharply reduce extreme world poverty by 2015. This means that many of the world's children will be left at great risk (United Nations 2009).

As different as they are, these various trends are interlinked and reflect the impacts that human behavior and use of damaging technologies, particularly those related to consumption of energy and consumer goods, can have on natural systems. They also are typical of what analysts call "third generation" environmental problems.<sup>3</sup> The distinguishing characteristics of this new generation of environmental problems can be summarized in this way:

- They are global in their origins and effects as well as national and local.
- Their impacts on society may be observed only in the long term, with the full effects often noticeable only over several generations. The benefits of public policy interventions may also be recognized only in the long term.
- They have low visibility. They are not sensed as readily as air pollution, water pollution, or congestion in national parks. Thus they are not as likely to be salient to the public.
- They are characterized by some degree of scientific uncertainty. Experts disagree on the magnitude of the problems, and often on the timing and location of their effects.
- The decision-making process over how best to address the problems is complex, with diverse policy actors involved in many different institutions in both the public and private sectors and at multiple levels of government, from the local level to international.
- The problems are not easily resolved, in part because the causes are rooted in fundamental social, economic, and political behavior, such as a desire to improve people's economic welfare and to protect national sovereignty. Individual changes in attitudes and behavior are necessary on a large scale in contrast to early environmental policy actions that called chiefly for compliance by polluters with technical and legal requirements.
- The solutions may be very costly, and the costs are likely to be imposed in the short term.

One conclusion is that the benefits of acting on these problems tend to be uncertain, long term, and broadly distributed among the public. Yet the costs of acting on them tend to be more certain, imposed in the short term, and often concentrated on particular individuals and groups (such as industry). The result is that policy makers face few incentives to act on the problems and few penalties for delaying action. Solving the problems is likely to involve a higher degree of conflict than the case for many other issues, and thus solutions depend on strong governing capacity and a political process that can resolve conflicts and achieve environmental quality goals. Put otherwise, solving environmental and energy problems requires much more than just better science and engineering, investment in new technologies, or improving management within government agencies. It will take strong political will to act and creative and effective political leadership to build the coalitions that are essential to approval of the requisite policies.

As the review of U.S. and global actions below suggests, such political will and leadership have been highly variable over time, depending on the presidential administration in power. Yet

all U.S. administrations have faced the kinds of obstacles noted here, and progress at addressing the problems has been understandably limited. The inability of the Obama administration to gain sufficient support in Congress to advance U.S. and global policy on climate change is the latest example of this pattern. Given this political reality, it is important to understand the evolution in public policies and institutions that are directed at environmental and energy problems, and to appreciate what research and analysis can tell us about governmental and political capabilities for action in the future.

## Advances in Understanding U.S. Environmental Policy

International environmental issues, much like their domestic counterparts, rose to prominence on government agendas during the 1960s and 1970s (Hempel 1996; Vig and Kraft 2010; Kraft 2011). As the political scientist Lynton Caldwell (1990: 303) noted so well, at that time the world's nations faced "new geophysical imperatives" with which most policy makers had no prior experience. That was the case, he argued, because global environmental changes were "occurring on unprecedented scales" that were "not yet faced by modern society." Much the same perspective was captured by Jane Lubchenco (1998: 492) in her widely quoted presidential address to the American Association for the Advancement of Science: "During the last few decades, humans have emerged as a new force of nature. We are modifying physical, chemical, and biological systems in new ways, at faster rates, and over larger spatial scales than every recorded on Earth.... (with) profound implications for all of life on Earth."

### *Stockholm, Rio, and Beyond*

Recognition of the array of interconnected global environmental issues reached high levels at the historic United Nations Conference on the Human Environment held in Stockholm in June 1972, and attended by 113 nations. The conference theme of Only One Earth underscored the importance of addressing global environmental problems through concerted international action. One outcome of this conference was establishment of the United Nations Environment Programme (UNEP) as a forum for discussing international environmental issues, although UNEP has remained a relatively weak institution that largely compiles and distributes environmental information and assessments.

On the twentieth anniversary of the Stockholm meeting, the world's nations convened once again, this time in Rio de Janeiro, Brazil, for the United Nations Conference on Environment and Development (UNCED), better known as the Earth Summit. Compared to the 1972 meeting, by 1992 there was a more palpable sense of urgency about global environmental problems such as climate change, degradation of agricultural land, water scarcity, lost of critical habitat, and threats to biological diversity, all of which were understood to be exacerbated by a growing human population. The conference organizers hoped that delegates would significantly strengthen international action and set a firm course toward sustainable development that could address the full range of global environmental threats. These hopes were captured in the summit's slogan: "Our Last Chance to Save the Earth."

The idea of "sustainable development" provided the intellectual framework for the Rio conference, building on the widely read Brundtland Commission report *Our Common Future* (World Commission on Environment and Development 1987). Most critically, that report and the summit itself defined environmental issues as integrally related to economic development. That is, environmental protection for the first time was seen as best achieved through the pursuit of sustainable development in decisions on agriculture, transportation, energy use, and water

development, among other economic sectors. Likewise, conference attendees acknowledged that economic development that ignores environmental and resource constraints was unlikely to succeed over time because it would tend to exhaust natural resources and alter the physical and biological processes that are essential for continuing economic progress.

The Earth Summit was the largest international diplomatic conference ever held, attracting representatives from 179 nations, including 118 heads of state, and with more than 8,000 journalists covering the event. Not surprisingly, its activities and recommendations were much anticipated and closely watched. Among its most important actions were approval of a “Rio Declaration on Environment and Development” that set out twenty-seven broad principles to guide future actions; a nonbinding *Agenda 21*, a long-term plan of action for achieving conference goals of environmentally sound development; and two international agreements. One was the Framework Convention on Climate Change; the other was the Convention on Biological Diversity. Both were considered to be legally binding documents (United Nations 1993). The climate change convention sought to reduce greenhouse gas emissions to 1990 levels by 2000 and eventually stabilize them at a level that would prevent human-caused climate change. It was this convention that set the stage for international negotiations leading to the 1997 Kyoto Protocol on climate change as well as the Copenhagen Accord noted at the beginning of the chapter.

As events leading to the Earth Summit and actions taken after it suggest, from the 1970s through the 1990s and well into the twenty-first century, policy makers struggled to adapt conventional foreign policy approaches to new environmental challenges. For the most part, the dominant foreign policy approach has been “conference diplomacy”—diplomatic efforts to arrange a multitude of international meetings at which policy specialists discuss the issues and reach a commitment to action. These commitments include what are called “hard” and “soft” public policy actions. In the context of environmental policy, the use of hard policy refers to establishment of legally binding agreements, whereas the reference to soft policy refers to nonbinding or voluntary accords. Even hard policy, of course, does not necessarily compel a nation to adhere to the agreements and for all of their limitations, soft policies may nonetheless affect the behavior of governments, individuals, and corporations.

Eventually these kinds of diplomatic efforts produced more than 1,000 international legal instruments that focus on the environment in some way. By one recent and more meaningful count, there are at least 200 multilateral environmental agreements that could be said to have global significance, and of these, UNEP considers some 40 to be “core environmental conventions” (Weiss and Jacobson 1999; Axelrod, VanDeveer, and Vig 2011). Nations also have agreed to nonbinding global plans of action on the environment, sustainable development, population growth, and biological diversity, among others (O’Neill 2009; Chasek, Downie, and Brown 2010; Soroos 2011). While formal legal agreements and plans of action (hard and soft) may sound impressive, the reality is that environmental treaties and other international agreements invariably have been hobbled by weak provisions and the usual constraints on international institutions, most notably the continuation of a firm dedication by individual nations to longstanding belief in the primacy of national sovereignty (Litfin 1998). The result is a set of imposing practical limits on the extent to which nations are in fact prepared to cooperate with one another in pursuit of common interests. Thus substantive achievements to date are typically described as modest at best (Axelrod, VanDeveer, and Downie 2011). James Gustave Speth (2002: 20) expressed the limitations well: “International environmental law is plagued by vague agreements, minimal requirements, lax enforcement, and underfunded support.” The treaties we have, he observes, are mostly frameworks for action; by themselves they do not drive change. Moreover, the process of negotiation that leads to approval of the treaties provides considerable leverage to countries that seek to protect the status quo. Thus the United States weakened the Kyoto Protocol on climate change and later withdrew from it anyway.

Despite these political constraints, some of the treaties, particularly the Montreal Protocol to protect the stratospheric ozone layer and the Convention on International Trade in Endangered Species (CITES), have been quite effective. These exceptions suggest what it might take to adopt and implement stronger international agreements in the future (Benedick 1998; O'Neill 2009). Indeed, the success of some treaties and the failure of others to move toward their goals suggest an important focus of future research that parallels work in the field of policy studies. What are the conditions for successful adoption and implementation of international environmental agreements? What factors make the most difference in achievement of the goals of these agreements? What are the major obstacles to success?

### ***Lessons from the Scholarly Literature***

Political scientists and other analysts have contributed much to our understanding of the development of modern environmental agreements as well the determinants of U.S. foreign policy that deals with environmental issues. This body of work includes description and analysis of the array of new institutions and processes that have been created over the past forty years. Some of this research follows in the long-standing tradition of foreign policy scholarship that has emphasized the formulation of new legal principles and policies, the establishment of new international organizations, and the debates over the strengths and weaknesses of the political and organizational processes that attempt to convert these principles and policies into measurable changes in environmental conditions around the world (e.g., DeSombre 2002; Soroos 2011). Other work has emphasized critical appraisals of the various treaties and organizations, and often has called for paradigmatic changes in global approaches to these problems in light of the limited success of environmental policy efforts to date (Ophuls and Boyan 1992; Hempel 1996; Lipschutz 2004).

These scholarly assessments have a parallel in the popular public policy literature, where prominent journalists, academics, and environmentalists (e.g., Sachs 2005; Speth 2004, 2008; Brown 2008; Friedman 2008) have tried to capture the distinctive qualities of the global environment and development challenges of the twenty-first century. They link these challenges to globalization of the economy, far-reaching changes in global communications, and the relentless pressures created by population growth, economic development, and reliance on outmoded and polluting technologies. Columnist Thomas Friedman (2008) sums up the pattern as a world that is increasingly “hot, flat, and crowded.” The analyses offered by such writers point to an urgent need for what many of them see as epic transformations in the society, polity, and economy, with an overarching emphasis on reducing adverse human impacts on the natural world.

Academic analyses deal with the same set of phenomena but with greater attention to historical development of institutions, ideas, and public policies. They also tend to emphasize questions of institutional capacity to govern and offer empirically based descriptions of environmental policies and processes that can help to inform whatever efforts might be made for institutional and political changes. Some of the best work in the field has made use of prevailing theories of international relations (e.g., realism, liberalism or idealism, and constructivism) and employed a variety of approaches and methods, from analysis of historical documents to interviews with policy actors and survey research, to try to understand the reasons for variable success of environmental agreements and the institutions that management them (Young 2002; Young, King, and Schroeder 2008; Axelrod, VanDeveer, and Vig 2011; Downie 2011; Peel 2011).

These lines of research include studies of non-state policy actors as well as the attitudes and decisions of formal government officials. The non-state actors, often referred to as global civil



society (Lipschutz and Mayer 1996; Keck and Sikkink 1998), include the often prominent role of non-governmental organizations (NGOs) in international organizations and negotiations (Betsill and Corell 2007; McCormick 2011). For example, some 7,000 NGOs attended the Earth Summit of 1992 and a concurrent Global Forum held at a nearby site in Rio de Janeiro. Many also attended the Rio-Plus 10 World Summit on Sustainable Development held in Johannesburg, South Africa in 2002. Scholars also have directed attention to the somewhat less visible but equally influential role of global epistemic communities—knowledge-based scientific or technical networks of professionals—in policy making (Haas 1992; Harrison and Bryner 2004).

Another line of research has focused on the critical stages in the policy cycle that follow the adoption of public policies such as international treaties. This includes analysis of policy implementation and compliance with environmental agreements, a stage that is not uncommonly the weakest part of international treaties and thus the reason that many environmental regimes have not been successful. Hence it is important to understand the many possible obstacles to effective environmental policy (Haas, Keohane, and Levy 1993; Downie 2011; Faure and Lefevre 2011). This body of work has advanced substantially in recent years and has yielded important insights into what can be done to improve the effectiveness of international agreements, such as use of so-called “sunshine” methods (e.g., national reporting, on-site monitoring by NGOs, publication of violations, and media access), provision of positive incentives (e.g., financial and technical assistance and training programs), and coercive measures (sanctions and penalties). In short, much like domestic policies, specific actions may be taken to improve compliance with international environmental policies (Weiss and Jacobson 1999).

Studies of the U.S. role in global environmental policy have pointed clearly to the impact of domestic politics, as seen in the striking variation from one administration to the next, particularly from the presidency of Bill Clinton to that of George W. Bush, and from Bush to Barack Obama (DeSombre 2000 and 2011; Matthew 2010; Kraft 2011, 2012). The Clinton administration favored strong action on climate change but was frustrated by a Congress that would not support such a move. The Bush administration argued repeatedly that climate change was too uncertain to warrant a strong U.S. policy, and in fact the administration withdrew the United States from the Kyoto Protocol much to the disappointment of the world community that was counting on U.S. leadership on climate issues. The Obama administration has tried to reassert that U.S. leadership role, as noted at the beginning of the chapter, but it continues to be hampered by domestic politics.

Comparative studies of the politics of climate change also underscore the central importance of domestic politics, particularly the structure and capacity of governmental institutions, the commitments that policy makers are prepared to make, and the electoral and other political incentives faced by policy makers (Schreurs 2004; Harrison and Sundstrom 2010).<sup>4</sup> Increasingly, studies of climate change policy suggest as well the importance of multilevel governance, that is, when global environmental problems are addressed at multiple levels of government, from local to global (Hempel 1996; Betsill and Rabe 2009; Selin and VanDeveer 2009, 2010; Betsill 2011).

## Enduring Policy Debates

As even this brief review suggests, the past four decades have brought impressive changes in recognition of emerging global environmental and energy problems, significant development of institutions and policies directed at those problems, and a large body of scholarship on U.S. foreign policy and global efforts on the environment and closely related concerns. Among

the most enduring policy debates that animated this period are those related to energy use and climate change; protection of earth's stratospheric ozone layer; population growth; economic development and foreign aid; international trade and globalization; protection against the loss of biological diversity; protection of oceans and fisheries; restrictions on the transboundary movement of pollutants, including acid rain and hazardous waste; and control of the particularly dangerous persistent organic pollutants (Chasek, Downie, and Brown 2010; Axelrod, VanDeveer, and Downie 2011). More recently, global concerns and U.S. policy actions have been directed as well at emerging concerns over the use of nanotechnology (Bosso 2010) and genetically modified organisms (GMOs), such as those used in agriculture.

American foreign policy directed at one or more of these interrelated problem areas bears some connection, of course, to the usual cluster of issues addressed by the White House, Congress, State Department, and the other executive branch agencies and offices involved in foreign affairs. For example, dealing with climate change or sustainable development issues naturally involves U.S.-China relations, and more broadly relations with developing nations. Foreign economic assistance, which historically has been closely linked with U.S. foreign policy objectives, now also includes consideration of environmental trends. Much the same applies to intelligence gathering and national security efforts, which increasingly are informed by environmental assessments and forecasts (Dabelko 2008; Matthew 2010).

Consider the North American Free Trade Agreement (NAFTA). It could be approved only with side agreements on environmental issues negotiated by the Clinton administration and with the creation of a Commission for Environmental Cooperation that was to oversee NAFTA's operation and resolve any disputes that arose. The trade agreement sought to prevent any of the three nations from using environmental regulations to gain an economic advantage, but it does not override international agreements such as the Montreal Protocol or CITES. Despite such restrictions, NAFTA remains controversial among environmental groups for fear that it will contribute to a worsening environment, particularly in Mexico. Experience to date suggests however, that NAFTA has helped to strengthen Mexico's environmental policies and standards, though admittedly progress has been limited by Mexico's economic difficulties in recent years. Many analysts expect that over time freer trade among nations is more likely to aid rather than weaken environmental protection. As poor nations develop economically, they are more likely to favor stronger environmental standards (Vogel 2006).

In a similar vein, population-assistance programs which date to Lyndon Johnson's presidency continue to be inextricably linked to broader foreign policy objectives, such as maintenance of multilateral aid channeled through the UN (where Republican administrations have blocked aid since the mid-1980s for fear that U.S. dollars might find their way to China and its harsh population policies) and the bilateral aid programs that have enjoyed bipartisan support (Kraft 1994: 2011). Similarly, U.S. contributions to intergovernmental organizations cannot be entirely separated from Washington's general foreign policy actions toward these institutions.

These interrelationships can be seen in the Obama administration. Hillary Clinton's appointment as secretary of state has particular importance for environmental and energy issues because of her strong commitment to using "smart power" in the exercise of U.S. leadership abroad. By this she meant the use of all of the tools of foreign policy, including diplomatic, economic, military, political, legal and cultural, that is, a combination of hard (military) and soft (diplomatic) power. The implication of this new emphasis is that only a careful and pragmatic assessment of any given problem can inform the choice of foreign policy instruments, a clear critique of the Bush administration's heavy reliance on the exercise of hard power, especially military intervention or its threatened use. This Clinton view also reflects much new scholarship that has emphasized a broad perspective of how in a global economy U.S. and other nations' interests can be furthered by a diversity of economic, intellectual, cultural, technological, and scientific endeavors that go well beyond traditional diplomatic and

military policy tools. This new perspective is particularly important for fostering innovations in support of sustainable development.

There also is increasing recognition that global environmental politics involves more than what critics call the top-down approach to planetary management that we see in UN conferences and the major treaties (Speth 2004). Supplementing this conventional approach are diverse efforts to deal with environmental threats, including economic development and social changes that are better characterized as forms of bottom-up problem solving. For instance, there has been much emphasis in recent years on management of critical natural resources by indigenous people, who have an obvious stake in the maintenance of productive forests, fisheries, and agricultural land. Some of these new perspectives were evident at the World Summit in 2002 as discussion focused less on new international treaties and more on pragmatic solutions for fighting environmental degradation and global poverty and including corporations and NGOs in future meetings. There is much that U.S. foreign policy might do to encourage this kind of development through both direct U.S. economic assistance and funds that are transferred through international organizations such as the World Bank and the Global Environment Facility, a dedicated financial organization for multilateral environmental agreements that operates through the UN development program.

The level of financial assistance offered by the United States and other developed nations is another continuing policy debate, as is whether that aid actually promotes sustainable development (Roberts et al. 2009). The financial pledges from developed nations were an essential component of Agenda 21 and are widely understood to be essential to help poor nations make progress toward the economic development and environmental protection goals of the Earth Summit and the World Summit on Sustainable Development. Yet the developed nations have fallen well short of the commitments made at those meetings. The United States has been among the worst performers. When viewed as a percentage of the overall size of economic output, the amount of Official Development Assistance (ODA) provided by the United States has been commonly the lowest of all aid donors (Hook 2007). According to the OECD, in 2010 the United States will contribute about 0.2 percent of its gross national product to developing nations, far below the target level of 0.7 percent set by the ODA regime. The actual dollar amount, however, was easily the highest in the world, at about \$25 billion projected for 2010.<sup>5</sup>

## Conclusions

Much has changed over the past four decades in the way the United States has dealt with global environmental and energy challenges. The nation has slowly begun to come to terms with such difficult and complex problems such as climate change and promotion of sustainable development around the world. New institutions and policies have been established to deal with global environmental problems, and the United States continues to play a leadership role in these developments, albeit one that varies considerably from one presidential administration to the next.

What is less certain is whether the nation and the world are truly prepared to respond to unprecedented global threats with policies and commitments that go well beyond what is evident to date. We remain in the early stages of global recognition of and action on third-generation environmental problems. What is needed over the next several decades is concerted action to build on the commitments made at Rio and Johannesburg. The choices are stark. The world will likely experience phenomenal economic growth over the next half century and more. While a welcome trend, that growth has a real potential to seriously erode environmental systems and make the world's people worse off in many ways. If the right choices are made,

however, they can help to restore damaged ecosystems, protect public health, and promote widespread prosperity. As James Gustave Speth (2002: 24) stated, there “is still enough time for this century to see the coming of a future more wondrous, intimate, and bountiful than our scenarios can imagine. But this world will not be won without a profound commitment to urgent action.”

It remains uncertain whether that commitment will be forthcoming. Given that reality, future research and analysis might be directed to determining what conditions might help to build the requisite public concern and political will to act, and which policies and institutions offer the most promise for addressing global environmental problems. In short, we need to learn what works and what does not, and seek over time to build the institutional capacity to address the new array of global problems with appropriate tools.

Whether the questions are what form of global cooperation on climate change is needed or the strengths and weaknesses of cap-and-trade policies or carbon taxes, how best to slow the world’s rising population, or how to foster sustainable energy use and sustainable patterns of economic development, there is much that political scientists and policy analysts can contribute. Some of the research summarized in this chapter suggests what can be done to strengthen knowledge about policy-making capacity, political leadership, and the advantages and disadvantages of particular policy strategies. The building of such knowledge will not provide all of the answers needed, but it could go a long way toward steering the nation and world in the right direction.

## Notes

- 1 There is no shortage of scientific assessments of the world’s environmental ills and scenarios for the future. For a review of data sources for global environmental outlooks, see Thomas M. Parris, “A Crystal Ball for Sustainability,” *Environment* 44 (September 2002): 3–4. One of the most useful is UNEP’s series of state of the environment reports, the latest of which, the Global Environmental Outlook-4 report, was released in late 2007. It assesses the state of the global atmosphere, land, water and biodiversity, covers changes since 1987, and spells out priorities for action. The UN considers *GEO-4* to be the most comprehensive UN report on the environment. It was based on the work of some 390 experts and was reviewed by more than 1,000 others. It can be found at [www.unep.org/geo/geo4/media/](http://www.unep.org/geo/geo4/media/). See also the World Bank (2008).
- 2 Although climate change skeptics continue to contest the IPCC findings, there is no doubt about the overwhelming scientific consensus on the reality of climate change and the role of human activities in anticipated climate shifts of the future. On recent events that have emboldened the critics, see Rosenthal (2010). The implications of the failure of delegates at the Copenhagen meeting to reach a stronger accord could also be seen when Yvo de Boer, the Dutch official who led international climate negotiations from 2006 through 2010, resigned from his UN position (MacFarquhar and Broder 2010).
- 3 Third-generation problems are distinguished from pollution control and land use issues of the 1970s and efficiency-based efforts to reform environmental protection policies in the 1980s and 1990s. For descriptions of the differences among the three generations of issue, see Mazmanian and Kraft (2009) and Kraft (2011).
- 4 Similarly, the field of comparative environmental politics would be a rich source of ideas about why nations adopt different forms of environmental policies, including those directed at global environmental problems. See Steinberg and VanDeveer (forthcoming).
- 5 The data each year are available at the OECD Web page under the heading of “aid statistics” ([www.oecd.org](http://www.oecd.org)).

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