The Politics of Climate Change

Environmental Dynamics in International Affairs

Edited by Paul G. Harris

Routledge
Taylor & Francis Group
LONDON AND NEW YORK

First published 2009 by Routledge
2 Park Square, Milton Park, Abingdon, Oxon, OX14 4RN

Simultaneously published in the USA and Canada
by Routledge
270 Madison Avenue, New York, NY 10016

Routledge is an imprint of the Taylor & Francis Group, an informa business

Typeset in Palatino by Value Chain, India
Printed and bound in Great Britain by the MPG Books Group

British Library Cataloguing in Publication Data
A catalogue record for this book is available from the British Library

ISBN10: 0-415-48646-7
ISBN13: 978-0-415-48646-0

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Notes on contributors

Liliana B Andonova (PhD, Harvard University) is Associate Professor in Political Science at the Graduate Institute for International and Development Studies in Geneva, Switzerland; on leave from Colby College, USA. Previously she has been awarded fellowship positions at the European University Institute, at the Earth Institute of Columbia University and at the Belfer Center for Science and International Affairs of Harvard University. She is the author of *Transnational politics of the environment: the European Union and environmental policies in Central and Eastern Europe* (2003). Her current research examines international institutions, public-private partnerships and climate change politics.

Tom Athanasiou (MPhil, Western Institute for Social Research) is a long-time left green critic. These days, he focuses on the development and promotion of climate stabilization strategies that are fair enough to actually work. More generally, his interests focus on class division and distributive justice within finite environmental spaces. He is the author of *Divided planet: the ecology of rich and poor* (1998) and, with Paul Baer, the co-author of *Dead heat: global justice and global warming* (2002).

Paul Baer (PhD, University of California Berkley) is a Postdoctoral Scholar at the Woods Institute for the Environment at Stanford University and Research Director of EcoEquity. He received his PhD from the Energy and Resources Group at UC Berkeley in 2005, and has written extensively on topics of ethics, precaution and risk with a focus on climate change policy.

Richard Benwell (MSt, University of Cambridge) is a first year PhD candidate at the Centre of International Studies, University of Cambridge, where he is graduate coordinator of the International Political Economy Research Group. He is Parliamentary Researcher for Baroness Miller of Chilthorne Domer, with whom he has worked on the Liberal Democrat DEFRA and Home Affairs teams.

Loren R Cass (PhD, Brandeis University) is an Associate Professor of political science at the College of the Holy Cross in Worcester, Massachusetts. His research focuses on environmental foreign policy and global environmental politics. He is the author of *The failures of American and European climate policy: international norms, domestic politics, and unachievable commitments* (2006).

Oriol Costa (PhD, Autonomous University of Barcelona) is a visiting Postdoctoral Researcher at the Centre for European Integration (Otto-Suhr-Institut for Political Science), at the Freie Universität Berlin. He is also a lecturer in International Relations at the Autonomous University of Barcelona (currently on leave). Recent publications include articles in *South European Society and Politics*, *Revista Española*

Introduction: the glacial politics of climate change

Paul G Harris[1]

Climate change is now a mainstream part of the international political agenda. Indeed, for anyone interested in, and concerned about, international affairs, few issues are more important. Climate change is not solely a technical issue to be resolved by scientists, but a political issue with political implications at all levels of global governance. Consequently, climate change has been the subject of three decades of diplomacy, and it is now a major concern of governments, international organizations, businesses and nongovernmental organizations, as well as increasing numbers of people around the world. But as the problem has grown in prominence, so have predictions of its adverse impacts, many of which are being felt today. Political responses have dramatically failed to keep up with the accelerating pace of climate change. Given the need to act very aggressively to limit and cope with climate change and its effects, a question arises: Why has more not been done? The purpose of this book is to help answer that question by revealing and applying some of the latest thinking about climate change in international affairs, and to explore how various proposals for tackling it will affect interstate relations in coming years. In this introduction I set the stage by (1) recounting recent assessments of how climate change affects the world and (2) summarizing the history of interstate responses to those assessments.

Global warming and climate change

Over the last two decades, scientists have radically improved their understanding of the causes and consequence of global warming—the warming of the Earth as a consequence of greenhouse gases (GHGs) building up in the atmosphere.[2] The Intergovernmental Panel on Climate Change (IPCC), created by governments in 1988 to study climate change, has concluded with *'very high* confidence that the global average net effect of human activities since 1750 has been one of warming' (IPCC 2007, 37). Carbon dioxide, the most influential GHG in aggregate, is emitted through the burning of fossil fuels (for example, coal, oil, natural gas), and when trees are felled and subsequently decay or are burned. 'Climate change' refers to

[1] I am grateful to Mui Pong Goh for expert help in pulling this collection together, Jon Symons for informed proofreading of this introduction, and Robert Keohane and many anonymous referees for comments on earlier drafts of essays to follow.

[2] Here I invoke arguments in Harris (2007b).

changes in climate and their consequences resulting from global warming, with the United Nations (UN) Framework Convention on Climate Change (FCCC) including under this rubric atmospheric changes connected directly or indirectly to human activities.[3] This human-induced global warming was, until recently, viewed as a *future* problem. But it is becoming clearer that *ongoing* climatic changes are consequences of global warming ('Climate change' 2006). The impacts of climate change on natural ecosystems and on human society and economies are potentially severe, particularly in parts of the world where geographic vulnerability and poverty make adaptation difficult or impossible. Furthermore, what is important in understanding the politics of climate change is that it is intimately connected to most economic activity and modern lifestyles, thereby tying Earth systems intimately with human systems (see Figure 1).

Recent and ongoing effects of climate change

The most authoritative reports on the causes and consequences of climate change have come from the IPCC, especially its 2007 fourth assessment report.[4] According to that assessment, since 1970 anthropogenic GHG emissions have increased globally by 70 per cent—with CO_2 in particular increasing by 80 per cent since 1995. The IPCC reports that 'atmospheric concentrations of CO_2 and CH_4 [methane] in 2005 exceed by far the natural range over the last 650,000 years' (IPCC 2007, 37). The concentration of CO_2 in the atmosphere in 2005 was 379 parts per million (ppm) compared to 280 ppm prior to the Industrial Revolution, with the annual increase being nearly 2 ppm. Importantly, although plants and the oceans absorb CO_2, global warming inhibits their ability to do so, thereby creating a feedback loop contributing to more warming and greater climate change. Perhaps seeking to counter the political influence of 'climate sceptics'—who question the reality of global warming and attribute it to all manner of causes, such as sun spots—the IPCC has declared that '[w]arming of the climate system is unequivocal, as is now evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice and rising global average sea level' (2007, 30). What is more, in a new determination since its third assessment report in 2001, the panel found that 'discernible human influences extend beyond average temperature to other aspects of climate, including temperature extremes and wind patterns' (2007, 40). That is, the impacts of climate change are undoubtedly attributable to human activities.

Among many ongoing adverse impacts of climate change, the proportion of Earth affected by drought has increased, as has the frequency of extreme weather events, heavy precipitation, incidence of intense tropical cyclones, extreme high sea levels in a wide range of locations, and heat waves (in most regions). Meanwhile, the frequency of cool days and nights has declined. These changes are having noticeable effects on both physical and biological systems, as demonstrated by melting glaciers and sea ice; warming of lakes and rivers; the

[3] 'Climate change' in IPCC lexicon refers to changes from both natural processes and human activities, whereas the FCCC addresses only the latter.

[4] Here I summarize findings of the IPCC's multivolume fourth assessment report as recounted in IPCC (2007). The full IPCC reports are available at <http://www.ipcc.ch/>.

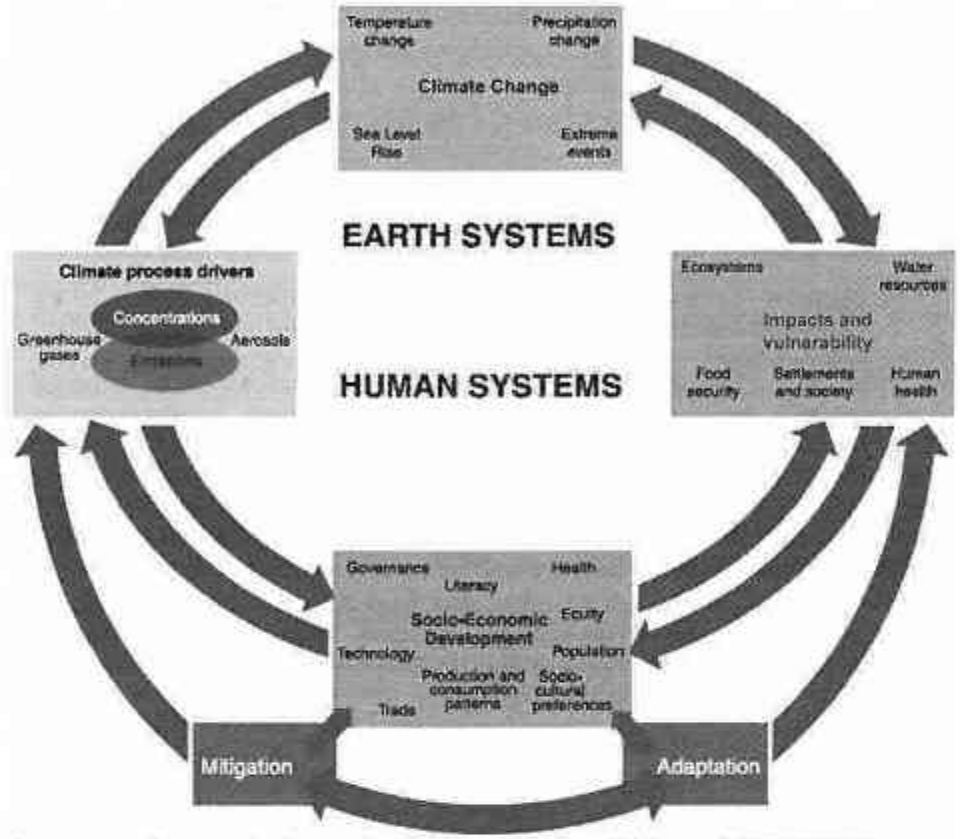

Figure 1. Anthropogenic drivers, impacts, responses and linkages (IPCC 2007, 26)
Source: Climate Change 2007: Synthesis Report. Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Figure I.1. IPCC, Geneva, Switzerland.

early advent of spring and associated changes to plants and wildlife, such as the earlier greening of vegetation and the corresponding impacts on bird migration and egg laying; and major alterations in marine ecosystems, including changes in salinity and currents, changes in the ranges of marine life and timing and locations of fish migrations, likely adverse impacts on reefs, and losses of coastal wetlands and mangroves (both crucial for healthy fisheries). The IPCC reports adverse changes to agriculture and harm to forests from more fires and pests. Human health has also been affected by heat stresses and expanding ranges of disease vectors (for instance, mosquitoes), among other effects.

Future effects of climate change

The IPCC has considered the influence of planned and likely national sustainable development policies and efforts to mitigate climate change. Its findings are not optimistic: even following the adoption of anticipated proactive policies, GHG emissions will climb. The panel projected that that there will be an increase of 0.2 degrees Celsius per decade under most emissions scenarios for the next two decades; future temperature increase will be dependent on the world's response.

Global average temperature is predicted to rise by 1.4 to 5.8 degrees Celsius, with the highest increase likely without additional mitigation policies. With continued warming, expected manifestations of climate change in this century will be 'larger' (that is, usually more adverse) than those seen in the last century (IPCC 2007, 45). Changes expected this century include generally higher temperatures over land and at high northern latitudes, reduced snow cover, thawing permafrost, shrinking sea ice, rising sea level, more frequent heat waves, heavy precipitation events and more intense tropical cyclones. As a consequence,

> the resilience of many ecosystems is likely to be exceeded this century by an unprecedented combination of climate change, associated disturbances (eg flooding, drought, wildfire, insects, ocean acidification) and other global change drivers (eg land-use change, pollution, fragmentation of natural systems, overexploitation of resources). (IPCC 2007, 48)

Positive feedbacks will increase as carbon uptake by plants reaches saturation. The risk of extinction for 20–30 per cent of plant and animal species will increase (based on only 2.5 degrees of warming), and changes in biodiversity and ecosystems seen in the last century will be exacerbated. All these will adversely affecting human needs such as water and food supplies. Coastal erosion and flooding due to sea-level rise will also increase. Extreme weather events are expected to become more frequent and intense, with 'mostly adverse effects on natural and human systems' (IPCC 2007, 53).

The health of millions of people will be adversely affected

> through, for example, increases in malnutrition; increased deaths, diseases and injury due to extreme weather events; increased burden of diarrhoeal diseases; increased frequency of cardio-respiratory diseases due to higher concentrations of ground-level ozone in urban areas related to climate change; and the altered spatial distribution of some infectious diseases. (IPCC 2007, 48)

Even in affluent parts of the world, which have a greater aggregate capacity to adapt, some groups of people, notably the poor and the elderly, will suffer the risks of climate change. The upshot is that, around the world, '[m]ore people are projected to be harmed than benefited by climate change', even if temperature increases are somehow mitigated (Working Group II 2001, paragraph 2.8).

Regional affects will vary, ranging from up to hundreds of millions of people exposed to water stress in Africa, increased flooding in the coastal and delta regions of Asia, significant loss of biodiversity in Australia, retreat of glaciers in the mountains of Europe and water shortages in southern Europe, loss of tropical forests and biodiversity in Latin America, water shortages and heat waves in North America, detrimental changes to natural ecosystems in polar regions, and inundations and storm surges in small islands—to list only a few of the anticipated changes in coming decades. Later in the century, the likelihood of abrupt or irreversible environmental changes will increase, with some of them considered inevitable. These could include rapid sea-level rise, significant extinctions (40–70 per cent of species if temperature increases exceed 3.5 degrees Celsius), large-scale, persistent changes to marine systems and fisheries, and yet more positive (in other words, harmful) feedback loops as oceans absorb more CO_2. In future centuries, impacts of climate change could be truly monumental.

The international response to climate change

Scientific assessments from the IPCC and other scientists provided the stimulus for international agreements to address climate change.[5] However, because the science has been intimately wrapped up with politics, climate diplomacy has often taken on a life of its own—one that is partly divorced from science. One of the earliest significant international events was the 1979 First World Climate Conference, a gathering of scientists interested in climate change and its relationship with human activities. From that conference a program of scientific research was established, leading to the creation of the IPCC in 1988. The IPCC's first assessment report and the Second World Climate Conference in 1990 added stimulus to the initial concerns about climate change among governments. Therefore, in December 1990, the UN General Assembly established the Intergovernmental Negotiating Committee for a Framework Convention on Climate Change. The goal of the committee was to negotiate a framework convention that would be the basis for subsequent international protocols dealing with climate change.

The Framework Convention on Climate Change and the Kyoto Protocol

From then till the 1992 UN Conference on Environment and Development ('Earth Summit'), representatives of over 150 countries negotiated the FCCC. The stated aim of the FCCC is the

> stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner. (article 2)[6]

The FCCC called on the world's most economically developed countries to reduce their emissions of GHGs to 1990 levels by 2000. However, this objective was not achieved. The FCCC came into force in 1994, after ratification by 50 countries. Particular responsibility was also laid on the developed states to provide 'new and additional' resources to developing countries to help them with their efforts to limit GHG emissions. If the negotiation of the FCCC was fraught with tensions between developed and developing countries, the negotiations after 1992 were even more contentious.

In 1995 the parties to the FCCC established the Conference of the Parties (COP), which became the convention's overriding authority. Many COP meetings were held to negotiate the details of how GHG emissions limitations would be achieved. At COP1 meeting (held in Berlin in 1995), developed countries acknowledged that they had a greater share of the responsibility for causing climate change and they would act to address it first. Central to the resulting Berlin Mandate was the demand by developing countries that the industrialized countries take on greater commitments to reduce their GHG emissions and assist

[5] For similar depictions of climate diplomacy, see Harris (2007a) and Harris (2007b).
[6] United Nations Framework Convention on Climate Change, 1992, reprinted in 31 ILM 84 (1992).

the poor countries with sustainable development. Thus COP1 affirmed the notion of 'common but differentiated responsibilities', meaning that, while all states have a common responsibility to address climate change, the developed countries have greater ('differentiated') obligation to do so. At COP2 (held in Geneva in 1996), countries called for a legally binding protocol with specific targets and timetables for reductions of GHG emissions by developed countries. The resulting Geneva Declaration served as the negotiating basis for the Kyoto Protocol, which was agreed in December 1997 at COP3 in Kyoto. The Protocol requires most developed country parties to reduce their aggregate GHG emissions by 5.2 per cent below 1990 levels between 2008 and 2012. However, not all developed countries agreed to be bound by the Protocol.

The Kyoto conference proved to be especially contentious, not least because the United States (US) seemed to have reneged on the Berlin Mandate when President Bill Clinton called for the 'meaningful participation' of developing countries. Nevertheless, diplomats at the conference managed to agree to the Kyoto Protocol, which established specific emissions goals for developed countries without requiring significant commitments from developing countries. The Protocol also endorsed emissions-trading programmes that would allow developed countries to buy and sell emissions credits among themselves. Other so-called flexible mechanisms included in the Protocol were 'Joint Implementation' (JI), whereby developed countries could earn emissions credits when investing in one another's emissions-reduction projects, and the Clean Development Mechanism (CDM), which allows developed country entities to pay for—and receive emissions credits for—emissions-reduction projects in developing countries.

Implementing the Kyoto Protocol

Some of the means by which the Kyoto Protocol's 5 per cent goal would be reached were codified at COP4 (held in Buenos Aires in 1998,). At COP5 in Bonn held in October 1999, the parties agreed to a timetable for completing outstanding details of the Kyoto Protocol by COP6 and, in an effort to speed up negotiations, gave the conference president the power to 'take all necessary steps to intensify the negotiating process on all issues during the coming year' (FCCC 1999). The sixth COP began in November 2000 in The Hague, but the talks broke down due to disagreements among delegates, particularly on the question of carbon sinks, which are processes, such as planting trees (afforestation) that can remove GHGs from the atmosphere. The Kyoto Protocol's ratification was put into doubt with the advent of President George W Bush in the United States, who withdrew all US support for it. The sixth COP resumed in Bonn during July 2001. The resulting Bonn Agreement clarified plans for emissions trading, carbon sinks, compliance mechanisms and aid to developing countries. At COP7 (held in Marrakech in 2001), the parties to the FCC agreed to a long list of ways to meet the Kyoto commitments. The result was the Marrakech Accords, a complicated mix of proposals for implementing the Kyoto Protocol, largely designed to garner ratification from enough states to allow the Protocol to enter into force. The parties agreed to increase funding for the FCCC's financial mechanism, the Global Environmental Facility, as well as to establish three new funds that would provide additional aid to poor countries: the Least Developed Countries Fund, the Special Climate Change Fund and the Adaptation Fund.

A milestone of sorts was reached at the October 2002 COP8 in New Delhi. A tacit agreement—between the US, a few other developed countries and several large developing countries, notably China and India—emerged, shifting much of the focus away from mitigating climate change and toward adaptation—wealthy countries agreeing to help developing countries adapt to climate change, rather than the former having to reduce their GHG pollution. It was at this COP, as well as at COP9, that diplomats discussed ways to implement the Marrakech Accords and prepare for ratification of the Kyoto Protocol. The tenth COP (held in Buenos Aires in 2004), was dubbed the 'Adaptation COP' because the discussion focused more on adaptation to climate change than the more usual COP discussions about efforts to mitigate it through emissions limitations. In the end, there were pledges for more assistance to aid poor countries most affected by climate change, but there were no firm commitments to make access to adaptation funds easier for developing countries. Importantly, it was also in 2004 that Russia ratified the Kyoto Protocol, allowing the agreement to finally enter into force in February 2005.

One visible aspect of the climate change negotiations has been the acrimony between the developed countries—particularly the US—and the developing world. The international negotiations have been plagued by efforts of developed countries to persuade developing countries to commit to emissions limitations, on the one hand, and developing country efforts to avoid such commitments on the other. These differences were manifested during the late-2005 combined COP11 and 'First Conference of the Parties Serving as the Meeting of the Parties' to the Kyoto Protocol (COP/MOP-1), which were held simultaneously in Montreal. Despite US attempts to derail the meeting, it formalized rules for implementing the Protocol (for example, rules for emissions trading, joint implementation, crediting of emissions sinks and penalties for noncompliance), streamlined and strengthened the CDM, began negotiations for further commitments by developed country parties to the Protocol beyond 2012 (when the Kyoto commitments expire), set out guidelines for an Adaptation Fund, and initiated a process for negotiating long-term action to combat climate change. Several developing countries, although still opposed to binding obligations, showed new interest in undertaking voluntary measures, in keeping with the principle of common but differentiated responsibility.

Building on the Kyoto Protocol?

Climate negotiations in the last few years have resulted in mostly incremental progress. In his opening address to the November 2006 COP12 in Nairobi, UN Secretary-General Kofi Annan characterized the negotiations up to that point as displaying a 'frightening lack of leadership' from governments (Annan 2006). At COP13 (held in Bali in 2007), the familiar arguments between developed and developing countries were manifest: European states argued in favour of deeper international commitments for GHG cuts, the US strongly opposed them, and developing countries argued for more financial and technological assistance (Pew Centre 2007). The discussions at Bali were pushed to a substantial degree by the IPCC's fourth assessment report, which removed any remaining doubt

(among officials willing to entertain the facts) about the seriousness of the problem. The meeting was important in its widespread opposition to efforts by US diplomats to thwart negotiations on a new, post-2012 agreement that would obligate developed countries to take on new responsibilities to limit GHG emissions and aid developing countries with sustainable development. In the end, developing country governments agreed that they would consider taking unspecified future actions to mitigate their GHG emissions, which was a substantial shift from their longstanding policy of refusing to agree to any commitments whatsoever. The *quid pro quo* for the developing countries' stated willingness to consider future emissions limitations was the streamlining of the Adaptation Fund and financing it with a new 2 per cent levy on CDM projects. Developed countries also agreed to new emissions targets and timetables—but, as with the developing states' agreement, nothing was specified. Diplomats instead adopted the so-called Bali Roadmap, intended to guide discussions leading to a new, comprehensive agreement, under both the FCCC and the Kyoto Protocol, to be agreed in time for a conference of parties in Copenhagen at the end of 2009.

All of these international efforts to address climate change have been far too timid when viewed in relation to the severity of the problem. Even with full implementation, the Kyoto Protocol will result in reductions of well under 5 per cent of the parties' emissions because the manner in which they are allowed to meet their commitments (for example, emissions trading and land-use changes) often will not result in significant national emissions cuts. However, scientists tell us that the emissions of CO_2 must be ended *completely* just to stabilize their concentrations in the atmosphere and to prevent chaos in the global climate system (Mathews and Caldeira 2008). In what could become a seminal essay on climate change, James Hansen et al (2008) have shown that, due to the time lag before the full impact of emissions is felt, even the *current* concentration of CO_2 in the atmosphere is likely to bring dangerous interference with Earth's climate system that the FCCC was intended to prevent. Even the relatively ambitious aim of the European Union to keep global temperatures to only 2 degrees Celsius above the preindustrial levels is far too weak a target. The current concentration of CO_2—about 385 ppm—is 'already too high to maintain the climate to which humanity, wildlife, and the rest of the biosphere are adapted' (Hansen et al 2008, 15). Instead, what is required at minimum is an effort to bring CO_2 concentrations down, very quickly, to about 350 ppm, meaning a near-total move away from any use of fossil fuels if carbon cannot be captured and permanently stored—something that is not practically possible at present. According to Hansen et al,

> Present policies, with continued construction of coal-fired power plants without CO_2 capture, suggest that decision-makers do not appreciate the gravity of the situation. We must begin to move now toward the era beyond fossil fuels. Continued growth of greenhouse gas emissions, for just another decade, practically eliminate the possibility of near-term return of atmospheric composition beneath the tipping level for catastrophic effects. (15)

Consequently, the Kyoto Protocol is, at best, a very tiny step towards greater action. In the meantime, global GHG emissions will continue to rise precipitously, notably because large developing countries (especially China and India) will be increasing their use of fossil fuels as their economies grow. Climate change will continue, virtually unabated, short of new, *much more aggressive* collective action to

reduce GHGs. However, strong signals of the more robust action needed are distinct in their absence. The IPCC, in a typically guarded understatement, characterizes the failure of the Kyoto Protocol this way: '[t]o be more environmentally effective, future mitigation efforts would need to achieve deeper reductions [than the Protocol] covering a higher share of global emissions' (IPCC 2007, 62). Indeed, the international legal instruments intended to avert dangerous interference with the Earth's climate—the stated aim of the FCCC—are increasingly focusing on mitigating and adapting to that dangerous interference, rather than averting it.

Conclusion

The international political response to climate change has been truly glacial. In the words of Hansen et al (2008, 15), 'the stakes, for all life on the planet, surpass those of any previous crisis. The greatest danger is continued ignorance and denial, which could make tragic consequences unavoidable.' Although some observers believe that climate diplomacy and the agreements that have resulted and that are now being negotiated are remarkable, and important steps towards the kind of action that scientists say is required have been taken, it is perhaps more accurate to describe those steps—relative to the scale of the problem and its anticipated impacts on people, communities and other life on Earth—as glacial. There has been movement in the right direction, but it is shamefully small given what is required. Even as ideas about the threat from climate change (for instance, 'climate security') and its ethical implications (for example 'climate justice') have taken hold and started to shape politics domestically and internationally, the response has been far too modest. As such, climate change demonstrates many of the limits of international politics.

Why this glacial response? Why have governments, international organizations and other important international actors started to move on climate change, and—most importantly—why have they not done much more? What can we learn from action so far to point us in new directions and new solutions? It is to these questions that the following chapters turn, and to which I return in the Conclusion.

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A climate of obstinacy: symbolic politics in Australian and Canadian policy

Loren R Cass

Introduction

Despite sharing a large number of attributes, Canada and Australia's foreign policy positions in international climate negotiations have varied significantly. Both are former British colonies with parliamentary governments, continent-sized countries with significant portions of their economies devoted to natural resource extraction and processing, and substantial emitters of greenhouse gas (GHG) emissions. Up until December 2007, the United States (US) and Australia were alone among the developed states in refusing to be bound by the Kyoto Protocol. Canada has ratified the Protocol but its emissions have continued to rise precipitously and it will be unable to meet its Kyoto commitments without generous use of the flexibility mechanisms contained in the Protocol. Both countries have struggled to reduce their GHG emissions, but Canada continued to pledge its support for Kyoto, whereas Australia rejected it until 3 December 2007 when Kevin Rudd—in his first official action after being sworn in as Australia's new prime minister—signed the instrument of ratification to make the Kyoto Protocol binding for Australia.

How do we explain the variation in Canadian and Australian foreign policy responses to climate change? A rational choice approach focusing on relative costs and benefits of participation in Kyoto could potentially offer an explanation. If this