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2010

Climate Change and Climate Politics; Strategic Insights, v. 9, issue 2 (Fall 2010) pp. 4-12

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Strategic Insights, v.9, issue 2 (Fall 2010) pp. 4-12

<http://hdl.handle.net/10945/11521>

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Climate Change and Climate Politics

Daniel Moran

The essay that follows is based on the introduction to the forthcoming volume titled *Climate Change and National Security: A Country-Level Analysis*, edited by Daniel Moran (Georgetown University Press, 2011), and is reprinted with the permission of the publisher and copyright holder (www.press.georgetown.edu). The book in turn is based on the revised and expanded proceedings of a conference held at the Naval Postgraduate School in December 2007, and sponsored by the Long-Range Analysis Unit of the National Intelligence Council, to support the preparation of the National Intelligence Assessment on Climate Change presented to the United States House of Representatives Permanent Select Committee on Intelligence (Select Committee on Energy Independence and Global Warming) in June 2008.

* * *

This book appraises the intermediate-term security risks that climate change may pose to the United States, its allies, and to regional and global order. It is intended to be a contribution to the growing literature on “environmental security,” a phrase that encompasses a wide range of policy problems. For many, environmental security is chiefly about addressing the challenges that climate change may present to humanity and its institutions. Security in this context is to be sought through measures designed to mitigate or adapt to changes in the earth’s ecology, which may some day make current social and economic practices unsustainable.^[1] Others interpret climate change less as a direct threat than as an additional source of stress on the sinews of public life, which may cause fragile governments to fail, or provide new impetus for a range of violent outcomes, ranging from social upheaval to aggressive war.^[2]

The present work is of the latter kind. It does not seek to comment on the likelihood that the environmental changes foreseen by current earth science will come to pass; nor to evaluate policies that might be chosen in response to them. It is, instead, an attempt to lay the problems hypothesized by science on top of the known or anticipated challenges of international life, and consider what might change as a consequence. It seeks to do this in a relatively precise and disciplined way, however, and it is useful to begin by considering why, in the field of environmental security, precision and discipline can be hard to achieve.

The greatest difficulty arises from the different speeds at which politics and the natural environment operate, or more precisely the rates at which they change. It must be admitted that the phrase “intermediate-term security risks” that was employed a few sentences ago to describe this project’s goals was chosen for no better reason than because it is equally unsatisfactory to scientists and statesmen alike. This volume originated in a project directly connected to real-

world policy-making, and was intended to produce a result of practical value in that context. To that end all contributors were asked to evaluate the security implications of climate change out to the year 2030. In the world of politics, twenty years is not the intermediate term. It is a long time: the far horizon within which serious strategic planning has traditionally been done.^[3] To policy-makers and planners, risks that are a generation away are long-term risks.

For earth scientists, on the other hand, twenty years is, if not quite the blink of an eye, then certainly a brief span of time, across which their models of our environmental future are barely able to generate useful results. The mainstream of credible work on climate change, as exemplified by the reports of the UN's Intergovernmental Panel on Climate Change (IPCC), has tended in recent years to look further outward, toward 2050 or 2100, in presenting its conclusions.^[4] Of necessity, models that are intended to anticipate conditions in fifty or a hundred years lose precision when asked to render judgments over significantly shorter (or longer) periods.

If we imagine the models of the earth scientist as a kind of lens through the future may be viewed, then we must accept that, like real lenses, those models have an optimum focal range, on either side of which the image becomes progressively blurry. The same can be said of the assumptions, experiences, and predilections of policy-makers, which are the lenses by which they also seek to envision the future. The central challenge in the field of environmental security arises from the fact that these two sets of lenses have such different focal lengths that their useful fields of vision barely overlap. The timeframe of this study was chosen not because it is optimal in terms of either politics or science, but because it is at least credible in both contexts, and sufficiently so to impose a reasonable restraint on the range of conditions to be considered. Twenty years may be a long time in politics, but not so long as to be unimaginable. It may be a short time in the life of the earth, but not so short that the changes anticipated by current science will not have become subject to preliminary "out-of-sample" testing, which will in turn strengthen (or discount) the credibility of predictions about the longer-term future.

In the same way that scientists and policy-makers diverge in their sense of how quickly time passes, so too do they differ with respect to the maps of the world they carry in their heads. The earth scientist's map is drawn by natural forces on a planetary scale, which may be effected by human actions in aggregate, but which nevertheless operate without regard to human institutions. Its crucial boundaries are drawn by nature, in the form of sea coasts, mountain ranges, forests, deserts, glaciers, and so on. These things matter to the policy-maker too, of course, but their influence is often trumped by other lines, drawn by the hand of man, which divide one sovereign state from another. It is within those lines that the political choices that govern humanity's response to climate change will be made.

There is every reason to believe those choices will vary a good deal, even among polities confronted with substantially similar forms of environmental stress. This project appraises the security risks that climate change poses when its most readily anticipated effects are applied to the known political and social conditions of states whose fortunes are of particular importance to

the United States. The process of selection, it is worth emphasizing, was driven by concrete considerations of policy as judged by those tasked with making it, and not by social-scientific criteria aspiring to general theoretical validity. The resulting list—39 countries plus the European Union—could easily have been extended to almost any length. It also omits some countries whose policy relevance would appear to demand their inclusion. A number of places of intense current interest, including North Korea, Afghanistan, Iran, and the states of the Horn of Africa, have not been included because their politics are at present so opaque or unsettled that it did not seem possible to disentangle and evaluate the likely consequences of their exposure to climate change, however grave that exposure might be. Nevertheless, the resulting study is still the most comprehensive of its kind, and broadly representative of the security challenges that climate change may pose over the next few decades.

All the research that follows takes as its starting point what might be described as “down the middle” assumptions about how anthropogenic climate change will unfold over the next few decades: i.e. that basic trends, both human and natural, will continue in their current directions and at their current pace. Climate science is all about building scenarios, and then modeling projected results across future time periods. Because this project considers a relatively short time period in environmental terms, albeit an extended one in political terms, it seemed most reasonable to employ scientific data based on models that assume the world economy will continue to develop more or less as it has recently: that the large-scale distribution of goods will continue to be governed by international markets; that market participants will continue to seek economic growth as a social good; and that no remarkable changes will occur in the consumption of fossil fuels, other than those that may arise as a consequence of rising costs in the marketplace.

Other sets of assumptions are possible, and have often been explored by earth scientists by way of testing the range of outcomes their models may generate under varying patterns of human activity—increasing or decreasing economic growth, static or increasing efforts at environmental mitigation, and so on.^[5] Because the focus of this project is on human activity itself, however, it was essential to hold the earth science constant, and also to avoid analyses predicated upon “worst-case scenarios”—or “best-case,” for that matter.

The one area in which the “no-worst-case-scenarios” rule proved most difficult to enforce was with respect to rising sea level, a particularly contentious area of climate science. Many well-founded early efforts to estimate sea level rise, including the work summarized by the IPCC, have been revealed as too conservative in light of subsequent experience, owing to the currently rapid melting of polar and glacial ice, whose pace has outstripped the scientific consensus.^[6] Our data on sea level rise is pegged to low-elevation coastal zones of one and three meters, which, within our timeframe, imply a rate of sea level rise significantly faster than anything foreseen by the mainstream of climate scientists even a few years ago. On balance, and assuming the persistence of current conditions, a one-meter rise would lie at the far end of the range of what is currently thought possible by 2030.^[7] A three-meter rise lies outside that range, and has been incorporated as a (relatively conservative) proxy for the kind of tidal surge that severe weather events like tropical cyclones routinely produce, and whose incidence is expected to

increase as a consequence of global warming.[8] The tidal surge produced by Hurricane Katrina, the most famous such episode in recent American history, exceeded seven meters.[9]

Contributions to this volume are organized around six primary questions, which chapter authors were asked to address in whatever form seemed best to them. Here are the questions as originally posed:

1. Your country or region may already be susceptible to unruly socio-political change due to existing traditional risk factors. Are the climate impacts hypothesized for 2030 likely to be an appreciable additional factor in triggering disruptive change, internally or externally?
2. The most basic negative responses to environmental stress are either fight (civil conflict or external aggression) or flight (internal or external migration). For the people of your country or region, which response would you consider more likely? Please provide what detail you can with respect to the political parties, social or ethnic groups, or local areas where the actions you anticipate may be most serious or most likely to occur.
3. Considering the disruptive possibilities you have described in response to the questions above, how would you assess the risk that the net result will be complete failure of the state?
4. Conversely, might your country or region possess latent reserves of social resilience and ingenuity, or of institutional capital, which will allow it to meet the challenges of climate change successfully? Are there important social or other interest groups in your country or region that might benefit from climate change? or expect to?
5. Would you anticipate that climate change might make your state an object of aggressive war to control scarce resources? Might it become a destination for migrants and refugees from neighboring countries?
6. What do the behaviors and developments that you have foreseen in your state suggest about the outlook and tone of official foreign policy? Would you expect it to become more or less open to engagement with the larger world? More or less amenable to Western and American influence and interests?

These are not quite the questions that scholars, left to themselves, would have formulated. They reflect the perennial need of policy-makers for firm, “actionable” answers to straight-forward questions, and as a consequence they may sometimes trample upon analytic nuances that are worth preserving in other contexts. It is apparent, for instance, that the choices available to a population confronted by climate stress go beyond “fight” or “flight.” The most likely choice is in fact adaptation in place; a possibility that is effectively acknowledged in the subsequent

question about ingenuity and social resourcefulness. Similarly, while it is possible that climate change may produce “winners” and “losers” within given societies, it is more likely to produce complex patterns of differential loss, thus increasing inequality while depressing economic performance and degrading social conditions for everyone.

The governing assumption of this project has been that realistic arguments about environmental security must be conducted within a politically relevant time frame, and with reference to real states and the real societies they govern. Its outstanding inference, in turn, is that easy generalities about the security implications of climate change will be hard to come by. Nevertheless, there is one general point that is worth emphasizing: given the power of the natural forces that appear to be bearing down on mankind, it is easy to lose sight of human agency, and assume that all essential questions will eventually be decided by phenomena that dwarf all human endeavor. That may be true in the long run. It certainly will be true if the worst anticipated effects of climate change come to pass. But it is not true during the period that concerns this book. Even when confronting the untrammelled forces of nature, humanity can expect to keep making its own history for a while longer yet. It will have to do its best.

Without unduly anticipating the results of the studies that follow, a few comments may be useful by way of highlighting some of the larger patterns that emerge from considering the questions above across dozens of individual countries and regions. It is apparent, first of all, that the kinds of social and political actions that impact international security are almost invariably overdetermined, and most commonly arise from the intersection of multiple factors that may well seem manageable individually. Viewed in these terms climate change poses an especially insidious challenge, combining as it does the gradual accumulation of relatively subtle effects, and an increasing tendency toward dramatic events (flooding, drought, storms, and so on) that are liable to galvanize public opinion at unexpected moments. Even the best governments have every reason to hate problems of this kind, and they are likely to prove especially troublesome to authoritarian regimes whose institutions have been optimized (if that is the word) to deal with more traditional forms of opposition and instability. In this respect it may be easy to underestimate the threat that climate change poses to the well-ordered police states of the developing world, whose true social base does not extend much beyond the armed forces and rent-seeking economic elites.

On balance it is clear that, for much of the world, the most important sources of resilience to climate change reside within societies rather than within governments; and also that many governments may prove reluctant to take the kinds of measures required to tap into that resilience and mobilize social capacity. It is in this area that the intersection between climate change and local conditions becomes especially complex, and where general statements about how things can go wrong at the macro level are of least value. It is of little use, for instance, to be told that “by 2020 between 75 million and 250 million [Africans] are projected to be exposed to increased water stress due to climate change,”^[10] unless one also knows which Africans specifically are most at risk, and what kinds of governmental and other responses can be expected.

The evidence presented here offers little reason to anticipate significant international violence as an immediate consequence of climate change and associated resource scarcities. Rather, problems of this kind seem more likely to arise as second-order effects brought about by climate-induced demographic shifts, which may inspire violent reactions depending on the social groups involved and the prevailing attitudes in play. Climate change will tend to increase inequality across a wide range of societies, even if it does not produce many outright “winners” anywhere. It is especially likely to heighten strains between urban and rural populations, a crucial social fault line throughout the developing world. And here one specific inference may be worth highlighting, which is that, for the foreseeable future, the critical path connecting climate change to social and political failure lies less through rising temperatures or rising sea-levels than through changing distributions of fresh water. If there is one piece of advice that this study would appear to recommend to policy-makers and strategic planners everywhere, it would have to be “follow the water.”

As to the ultimate question of how climate change may impact relations between the countries studied here and the United States, the picture is mixed. In the developing world there is little doubt that adaptation to climate change will outweigh the mitigation of carbon emissions as a policy priority; and that in the pursuit of effective adaptation Western technological expertise and financial assistance will be essential. In this respect climate change may provide a framework of common interests that, if faced squarely and honestly, might bring North and South closer together. Yet it is also likely that, as public consciousness of climate change and its perils expands, so too will an awareness that historical responsibility for those perils lies disproportionately at the feet of a few states. Some of those states are among the greatest beneficiaries of the exploitative economic and colonial practices of the past. Others are among the chief victims of those same practices. The largest producer of greenhouse gases today, as is well known, is China. It is less well known that Indonesia is now on the verge of outstripping the entirety of the EU as a carbon emitter. India and Russia also rank high in this regard, and appear destined to rise; though neither they nor anyone else is likely to surpass the United States on a per capita basis anytime soon.

This last metric may well prove to be the one that makes the most emotional sense to the average citizens of the developing world. They now find themselves subject to unexpected scrutiny on account of environmental practices no different than those adopted by advanced societies during their own rise to material prosperity. There is no question that such perceptions will play their part in determining whether climate change proves to be a new source of strife, or a new means of reminding mankind that we really are all in this together. This volume is intended as a contribution to security studies, not to moral philosophy. Yet it is safe to say that, in managing the security consequences of climate change, it will not be possible to leave questions of justice out of account.

References

1. For a representative selection of recent scholarship in this vein, see the papers presented at the workshop on *Human Security and Climate Change* (Oslo, 21–23 June 2005), collectively available at http://www.gechs.org/2005/06/24/holmen_workshop/. It goes without saying that traditional concepts of national and international security, and newer ones of human and environmental security, are not mutually exclusive. See for instance Jon Barnett and W. Neil Adger, “Climate Change, Human Security, and Violent Conflict,” *Political Geography* 26, no. 6 (August 2007): 639-55. Sharon Burke and Christine Parthemore, eds. *A Strategy for American Power: Energy, Climate, and National Security*, Center for New American Security Solarium Strategy Series (June 2008), is an interesting example of how the rhetorical strategies of Cold War security studies can be adapted to the challenges of reducing dependence on fossil fuels and cutting greenhouse gas emissions.

2. Climate change was first injected into the mainstream literature of security in the 1990s as a consequence of a number of challenging works hypothesizing that, in the wake of the Cold War’s unwinding, *casus belli* should henceforth be expected mainly from competition over resources, which climate change would exacerbate. See, for instance, Thomas Homer-Dixon, *Environment, Scarcity, and Violence* (Princeton, NJ: Princeton University Press, 1999); and Michael T. Klare, *Resource Wars: The New Landscape of Global Conflict* (New York: Metropolitan Books, 2001). More recent work has tended to back away from such neo-Malthusian scenarios, primarily because it has proven difficult to specify the nature of the causal links required to connect environmental stress and international violence. Yet it remains apparent that such linkages are possible and even likely in given circumstances. See for instance Idean Salehyan, “From Climate Change to Conflict? No Consensus Yet,” *Journal of Peace Research* 45, no. 3 (2008), 315-26; Halvard Buhaug, Nils Petter Gleditsch and Ole Magnus Theisen, “Implications of Climate Change for Armed Conflict,” presented at the World Bank Workshop on *The Social Dimensions of Climate Change* (Washington, DC, 5-6 March 2008), http://siteresources.worldbank.org/INTRANETSOCIALDEVELOPMENT/Resources/SDCCWorkingPaper_Conflict.pdf; and the articles assembled by Ragnhild Nordås and Nils Petter Gleditsch in *Political Geography* 26, no. 6, Special Issue on Climate Change and Conflict (August 2007): 627-735. Nordås and Gleditsch begin their volume with a useful survey of the evolution of the literature on environmental security (627–38), which may be compared to an earlier one by Gleditsch (“Armed Conflict and the Environment: A Critique of the Literature,” *Journal of Peace Research* 35, no. 3 [1998]: 381-400); and a more recent one by Geoffrey D. Dabelko, “Planning for Climate Change: The Security Community’s Precautionary Principle,” *Climate Change* 96 (2009): 13-21, <http://www.springerlink.com/content/gn2h652887023576>.

3. The current top-line statement of American military doctrine, for instance, is *Joint Vision 2020*, which appeared in May 2000, www.fs.fed.us/fire/doctrine/genesis_and_evolution/source_materials/joint_vision_2020.pdf. It will eventually be succeeded by a new statement called *Joint Vision 2030*, which is under development now. See also the series of long-range planning documents created by the National Intelligence Council: *Global Trends 2010* (1997); *Global Trends 2015* (2000); *Mapping the*

Global Future 2020 (2004), and the current statement, *Global Trends 2025: A Transformed World* (http://www.dni.gov/nic/PDF_2025/2025_Global_Trends_Final_Report.pdf), which appeared in 2008; also NATO's "Multiple Futures Project: Trends and Challenges in Global Security to 2030," <http://www.act.nato.int/multiplefutures/ACT-RUSI%20Roundtable%20Report.pdf>.

4. Intergovernmental Panel on Climate Change, *Climate Change 2007: Impacts, Adaptation and Vulnerability*. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, ed. M. L. Parry et al., (Cambridge: Cambridge University Press, 2007). See also Nick Mabey, *Delivering Climate Security: International Security Responses to a Climate Changed World*, Royal United Services Institute Whitehall Paper 69 (London: Routledge, 2008).

5. An influential set of alternative future scenarios for use in this context were presented in the *IPCC Special Report on Emission Scenarios* (2000), http://www.grida.no/publications/other/ipcc_sr/?src=/climate/ipcc/emission/, which sought to envision future conditions varying with relation to economic practices, regional and global integration, and increasing or static emphasis of environmental remediation. Within the IPCC framework the assumptions of this project are consistent with scenario A1B, the one most frequently discussed in subsequent IPCC reports. Scenario A1B hypothesizes that economic and demographic trends will continue along current lines, and that energy consumption will remain balanced among multiple sources, rather than shifting decisively away from fossil fuels. An example of a study that seeks to consider global security across a range of climate scenarios—roughly the mirror image of the present project's structure—is Kurt M. Campbell et al., *The Age of Consequences: The Foreign Policy and National Security Implications of Global Climate Change*, Center for Strategic and International Studies (November 2007), http://www.csis.org/media/csis/pubs/071105_ageofconsequences.pdf.

6. See for instance Susmita Dasgupta, Benoit Laplante, Craig Meisner, David Wheeler, and Jianping Yan, "The Impact of Sea Level Rise on Developing Countries: A Comparative Analysis," World Bank Policy Research Working Paper 4136 (February 2007), http://www-wds.worldbank.org/external/default/WDSContentServer/IW3P/IB/2007/02/09/000016406_20070209161430/Rendered/PDF/wps4136.pdf; James Hansen, "Huge sea level rises are coming—unless we act now," *NewScientist Environment*, 25 July 2007, <http://www.newscientist.com/article/mg19526141.600>; Alun Anderson, "The Great Melt: The Coming Transformation of the Arctic," *World Policy Journal* 26, no. 4 (December 2009): 53–65; and Orville Schell, "The Message from the Glaciers," *New York Review of Books* 57, no. 9 (27 May 2010): 46–50. The melting of Arctic sea ice will not contribute to sea level rise, though it is symptomatic of the same environmental trends. It has lately emerged as a security issue in its own right, because of the opportunities for resource competition and other forms of national rivalry that it may incite. See Scott G. Borgerson, "Arctic Meltdown: The Economic and Security Implications of Global Warming," *Foreign Affairs* 87, no. 2 (March-April 2008): 65-68;

and Klaus Dodds, “The Arctic: From Frozen Desert to Open Polar Sea?” in *Maritime Strategy and Global Order*, ed. Daniel Moran and James A. Russell (Georgetown University Press, forthcoming).

7. A 1-meter LECZ is the lowest level at which effects upon population can be calculated with any precision. This is owed in part to significant discrepancies between relevant geographic and demographic data. See Marc Levy et al., *Assessment of Climate Change Impacts on Select US Security Interests*, Center for International Earth Science Information Network Working Paper (Columbia University, July 2008).

8. On the significance of extreme weather events as an aspect of environmental security see Joshua W. Busby, *Climate Change and National Security: An Agenda for Action*, Council on Foreign Relations Special Report 23 (November 2007); idem., “Who Cares about the Weather: Climate Change and U.S. National Security,” *Security Studies* 17 (2008): 468-504; and Sven Harmeling, *Global Climate Risk Index 2010: Who is Most Vulnerable? Weather-Related Loss Events Since 1990 and How Copenhagen Needs to Respond*, Germanwatch Briefing Paper (December 2009), <http://www.germanwatch.org/klima/cri2010.pdf>.

9. Richard D. Knabb, Jamie R. Rhome, and Daniel P. Brown, *Tropical Cyclone Report: Hurricane Katrina, 23-30 August 2005* [updated 10 August 2006], National Hurricane Center, http://www.nhc.noaa.gov/pdf/TCR-AL122005_Katrina.pdf.

10. IPCC WGII, *Climate Change 2007*, 13.