

# The geopolitics of climate change: avoiding determinism, fostering sustainable development

## An editorial comment

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It is just over a hundred years since geographer Ellsworth Huntington linked climate change to the rise and fall of nations and to invasions of migrants driven out of Asia by periodic droughts. His most influential texts—*The Pulse of Asia*, *Climate and Civilization*, and *Mainsprings of Civilization*—are rife with a climate determinism that explains everything from economic development to intelligence, migration, conflict and the fall of great nations in terms of temperature, drought, and other environmental variables (Huntington 1907, 1915, 1945). In the *Pulse of Asia* he concludes:

‘The connection of insurrections, wars, and massacres with deficiency of rain is less direct than that of famines, but no less real’ (*Pulse of Asia* p 874)

Among the criticisms of his work was his overreliance on correlation and anecdote, a lack of attention to alternative explanations, and selective choice of examples to support his arguments about the importance of climate to culture and politics. His work was dismissed for its racism in suggesting that the peoples of the tropics were less able than those of the temperate zone (Martin 1973; McGregor 2004).

The criticisms of Huntington’s methods and assumptions resurface in current debates about the impacts of climate change and the evidence for links between climate and geopolitics. It is interesting to note that from the ashes of early 20th century climate determinism emerged precursors of a contemporary focus on adaptation to climate change—the frameworks of possibilism and cultural ecology that suggested the power of humanity to adapt to extreme climate and environmental stresses through innovation, technology and social organization.

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Echoes of this century old argument are reflected in Jon Barnett's essay (2009) on climate geopolitics in this volume where he criticises the links that have been made between climate and violent conflict, and raises concerns about the securitization of climate discourse. He suggests that many of the claims that climate has caused wars and conflict are speculative and supported by little evidence, and raises concerns about the ways in which the climate science of the IPCC may be used to underpin the national security agenda of countries like the United States. Barnett's warning about the use of climate change to raise national security concerns should also be extended to the ways in which climate policy can create and exacerbate tensions at more local levels—for example when carbon mitigation or sequestration projects are located with inadequate attention to local property rights and land uses (Bumpus and Liverman 2008) or when natural disaster risks are used to forcibly relocate populations or control the traditional use of land.

His caution about the double edged nature of the Nobel Peace prize to the IPCC is not the first time that scientific research has both earned the prize while generating concerns about political economy. In 1970 Norman Borlaug received the prize for his contributions as a plant breeder to the Green Revolution, where although it contributed to increases in cereal yields around the world also led to increased inequality and environmental problems from irrigation, chemical use and monocultures (Borlaug 1972; Pearse 1980).

The debate about the securitization of environmental issues has been longstanding, emerging in the early 1990s, along with the publication of books like Al Gore's *Earth in the Balance* and essays and books by Norman Myers (Gore 1992; Myers 1994). Even prior to this, climate change had been identified as a threat to US security in studies by the CIA and the National Defence University (USCIA 1974; NDU 1978). While some authors, such as Homer Dixon and Kaplan, embraced the idea that environmental changes might cause conflict (Homer-Dixon 1999; Kaplan 1994), others such as Deudney and Dalby, as well as Barnett himself, raised concerns both about the evidence for links and the implications of making the environment a security issue (Barnett 2001; Dalby 1992; Deudney 1991).

I myself wrote on the issue in the early 1990s, focusing on potential links between environmental issues and conflict in Mexico, but came to the conclusion that environmental change and pollution was as much a reason for cooperation as conflict and that there was little evidence to link environmental change to conflict and migration (Liverman 1994). Some of my work was used to support the opposite argument—with my research on the possible impacts of climate change in Mexico used in studies suggesting that global warming would increase migration from Mexico to the United States (Schwartz and Notini 1994) and research with O'Brien cited as linking deforestation to the Chiapas rebellion (O'Brien 1998; Howard and Homer-Dixon 1998).

The Mexican case illustrates the research gaps that make it difficult to link environment with conflict or concerns about environmental refugees. There are so many other obvious non environmental explanations for conflicts such as the Chiapas rebellion—poverty, unequal land tenure, ethnic and elite politics—that claiming any environmental cause is unjustified. There are parallels to an earlier conflict, the so called 'soccer war' of 1969 between El Salvador and Honduras that inspired a careful analysis by Durham who showed that sporting and environmental explanations for

the conflict were inadequate and that the war was rooted in unequal land tenure and the exiling of Salvadorean migrants from Honduras (Durham 1979).

It is also difficult to make a strong case for climate change as a cause of migration in Mexico partly because the many long term surveys of migrants rarely ask questions about environment or natural hazards, and because several apparently climate driven migrations seem at second look to have other more complex causes or are only temporary adjustments to natural disasters and bad harvests.

Several years ago as part of a study of environmental change in Sonora, colleagues and I investigated the role of drought in migration, focusing on the severe drought that occurred in northern Mexico and the Southwest United States in the 1950s.<sup>1</sup> Because the 1950s was a period of large scale migration of Mexicans to work in the US and also a time when many Sonorans left the inland mountain regions we wondered if there was a connection between the two. While we found evidence of severe drought in tree ring and rainfall records, oral histories, news accounts, and a broader analysis of Sonoran political economy in the 1950s suggested that the migration of people out of the inland mountains had other primary causes. First, we found that drought impacts were reduced in Sonoran valleys by a series of new wells drilled under the Cardenas administration, and although many cattle died, livelihoods actually improved in parts of the interior. Second, it became clear that the US ‘Bracero’ program exerted a strong pull for migrants who were drawn out of rural areas by labor recruiters and promises of work in US farms and cities rather than pushed by drought. And thirdly we found that many of those who left the inland region were moving not to the US but to coastal Sonora where new irrigation districts were opening up and providing good opportunities for farm work. Hardly any of the people we interviewed saw the drought as the main or even a significant factor in the out migrations.

Careful empirical work by researchers such as Eakin, who actually talk to people about their decisions in the face of environmental change does show that climate variability and change can influence livelihoods in rural Mexico, but the implications are less about conflict and national security and more about questions of the ‘other’ securities—food, water, and health (Eakin 2006).

This ‘human security’ agenda has been the theme of an international research collaboration—the Global Environmental Change and Human Security (GECHS) programme of IHDP that holds its synthesis conference in 2009 ([www.gechs.org](http://www.gechs.org)). GECHS has focused on focuses on the way diverse social processes such as globalization, poverty, disease, and conflict, combine with global environmental change to affect human security—defined as a state where individuals and communities have the freedom to take action in response to changing environmental conditions (O’Brien 2006). This resituates the discourse in one of human rights and justice rather than international relations and national security.

The issues of food and water security under a changing climate are becoming the focus for both a mitigation agenda that derives from ethical and justice questions about the impacts of climate change, and a challenge for the design of programmes of adaptation to these impacts. It also requires us to consider the effects of climate

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<sup>1</sup>This research was conducted with David Yetman and Alberto Burquez.

policies on human security—for example, the ways in which a greenhouse gas mitigation policy focused on biofuels might compete for land and water with agriculture.

The complex ways in which climate interacts with other factors to threaten individual food and water security, and the multiple strategies that households use to respond, sets up a huge challenge for analysing processes and geopolitics at larger scales (Ericksen et al. 2009). This has become an urgent agenda item for some of the world's most important food institutions such as the UN Food and Agricultural Organization (FAO), the Consultative Group on International Agricultural Research (CGIAR), private sector actors such as food processing companies and supermarket chains, and for humanitarian organisations such as Oxfam. How will climate change, climate mitigation and climate adaptation interact with all the other changes that are occurring in food systems—such as changes in consumption patterns, input use, trade and governance—to affect food security?

Changes in the last year make research into these questions even more pressing. Early in 2008 the prices of many critical food commodities soared, with some blaming the increases on drought and on the expansion of biofuels, and others making links to increased demand in Asia, higher energy costs or to market speculation. In many countries the price increases caused hunger among poor populations. Although prices have dropped from the peaks, and production has increased, food systems are still volatile, especially in view of the economic recession now (as of 2009) affecting much of the world. The impact of the recession on food security will be felt partly through the dramatic increase in unemployment but also through foreclosures on farms and business, difficult access to credit, and cut backs in government programmes. These are also changes that will increase vulnerability to climate change, a new 'double exposure' that is likely to affect human security and resilience (Leichenko and O'Brien 2008).

Of course, the recession may produce a slowing or reduction in greenhouse gas emissions but this is unlikely to alter the medium term projections for climate warming which are now projected at the high end of IPCC scenarios with some recent studies suggesting a warming as high as 7°C by 2100 and increased risks of rapid changes in regions such as the Amazon (Richardson et al. 2009). This is where we may need to reconsider the balance between conflict and cooperation, international and local security—but through carefully considered frameworks and empirical studies that seek to understand how people and governments will respond to these changes.

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