



The RMC alliance  
of policy research  
organisations

---

## CLIMATE CHANGE AND DEVELOPMENT

### CONSULTATION ON KEY RESEARCHABLE ISSUES

---

**CROSS-SECTORAL ISSUES**  
**SECTION 3.1. SECURITY**  
**LAUREL MURRAY**

Saleemul Huq and Hannah Reid  
Climate Change Group  
International Institute for Environment and Development  
3 Endsleigh Street, London WC1H 0DD, UK  
Tel: (+44 20) 7388 2117  
Fax: (+44 20) 7388 2826  
Email: [saleemul.huq@iied.org](mailto:saleemul.huq@iied.org) [hannah.reid@iied.org](mailto:hannah.reid@iied.org)

## Climate Change and Security

### The Ecology of Conflict

In 1985, the UN Secretary General, Boutros-Boutros Ghali, famously predicted that “the next war in the Middle East will be fought over water, not politics”. Time has shown that the popular “Water War” hypothesis was too simplistic and never materialised; nonetheless, it represents a paradigm shift of our understanding of conflict and security to include the role of ecological factors. The fear that environment and resource scarcity will directly and exclusively lead to armed conflict, specifically interstate war, now seems unlikely. What *is* possible, however, and perhaps more frightening, is that ecological factors *indirectly* lead to conflict by increasing social and political unrest. This “ecological variable”, when combined with other factors such as ethnicity and religion, political instabilities, poverty and crime, offer a much more comprehensive understanding of conflict (Porto, 2002). It further expands the security debate, particularly in conflict-prone countries, whose Governments would not normally recognise the environment-conflict linkages. The environment-security relationship is still only a small branch of development and security fields, especially climate change and security, and yet some of the most innovative research is currently being explored in a range of countries and disciplines. Indeed, the study of environment and security is not limited to any one discipline, but found directly or indirectly in a multitude of research fields. This section will limit its discussion to traditional security fields of strategic studies and international relations to describe some of the advances in research and the possible impact climate change may have on security and societal conflict.

### Traditional Security Studies

The academic study of global conflict and security has traditionally fallen within military studies and international relations, whose primary focus is on the causes of global or interstate wars. In particular, security during the Cold War years was dominated by Western scholarship focused on such issues as nuclear deterrence and balance of power. However, while the security research community was busy studying interstate wars or “wars that matter”, low-intensity violent and non-violent conflicts have steadily increased (Porto, 2002, p3). Such conflicts have seen a 6-fold increase in the last 50 years, and have caused unprecedented societal and human destruction. The wider development community, especially researchers and policy-makers in least developed countries, have long recognised the rising threat of such societal conflicts. As explained by Porto, academic and policy-making circles in the West have focused on a ‘clausewitzian universe’ of interstate wars and were largely unprepared for the task of explaining societal conflicts such as ethno-

nationalism, religious militancy, environmental destruction, resource scarcity, and humanitarian intervention (p4). Moreover, Defense Departments have traditionally paid for research into conflict and security propagating the war-centered research agenda. However, starting in the mid-1990s, private foundations began funding more security and conflict research and supported a wider range of scholars and policymakers (Hartman, 2002). Security and conflict are not seen any more as an exclusive military concern; but wider development problem, and this had led to an expansion and diversification of the field overall.

### **Definition of Conflict**

In the past, 'conflict' has largely been synonymous with war, and yet interstate and civil wars are but one manifestation of conflict. Moreover, not all conflict is *violent* conflict. Indeed, non-violent conflicts between groups can be just as destructive for a society, although the risk of human life is reduced. This fact has long been recognised by the research and policy communities operating in conflict-prone countries, especially in Africa, and represents a traditional divide between so-called 'northern' and 'southern' scholarship. In the North, security studies is dominated by military studies and international relations, both of which have a research tradition in war studies. However, changing global politics and an undeniable rise in societal conflict has led to an expanding appreciation of conflict and a diversification of security studies. Presently, conflict can be understood as "a situation in which competing actors have different interests that they are prepared to aggress for or defend, violent or not". (Zeitoun, 2004)

### **The Environment in New Conflict Studies**

While our concept and study of 'conflict' has expanded, so too has our understanding of the underlying social, political, economic, and ecological causes. Beginning in the 1970s, political scientists such as Ted Gurr and Jessica Matthews began to draw the possible connection between the environment and conflict issues. And in 1989, the first major, coordinated attempt was made to investigate this relationship: the Project on Environmental Change and Acute Conflict (ECAC). Thomas Homer-Dixon led a ten year research project that brought together over a hundred experts from fifteen different countries to investigate the role of environmental scarcity in violent conflict. Focusing on renewable resources, Homer-Dixon explained that there are two main sources of environmental scarcity: (1) the *physical* vulnerability of a resource in which the supply and/or demand is so great that it is depleted; and (2) *structural* vulnerability where existing institutions, class and ethnic relations cause some groups to receive a disproportionate share of the resource, thus causing a scarcity for the remaining population. He proposed that supply-induced, demand-induced, and structural scarcities can act alone or in concert to produce *resource capture* by more powerful group(s)

and *ecological marginalization* of lesser groups, which, in turn, contribute further to environmental degradation (Homer-Dixon, 1999, p108). However, Homer-Dixon avoids “Water War” (Malthusian) determinism by suggesting that environmental scarcity is not always detrimental. Scarcity can actually increase social and technical ingenuity allowing a society to adapt and even prosper. This is because scarcity can raise the incentive for technical and social entrepreneurs and provide solutions such as improved technology, redistribution, and substitution of one resource for another -- techniques which have worked well in developed countries. However, *if* a society is lacking in strong social institutions (such as a weak government, inefficient markets, ambiguous property laws, or poor research facilities) then environmental scarcity will *decrease* rather than increase the supply of ingenuity. When environmental scarcity “simultaneously increases the requirement for ingenuity and impedes its supply” an *ingenuity gap* is created which will ultimately have negative social effects such as decreased economic productivity, migration, and social segmentation. In vulnerable societies, such effects will lead to internal conflict, and perhaps civil violence.

Such research has illustrated the relationship between the environment and human conflict, which is often complex and indirect. Taking the example of migration and environment degradation, David McDonald describes how,

“[Homer-Dixon] reverses the migration-environment equation used by neo-Malthusians ... by making *the environment* the independent variable. In other words, [his] security approach starts to look at how environmental change creates population movement, not how population movements create environmental change...” (p16)

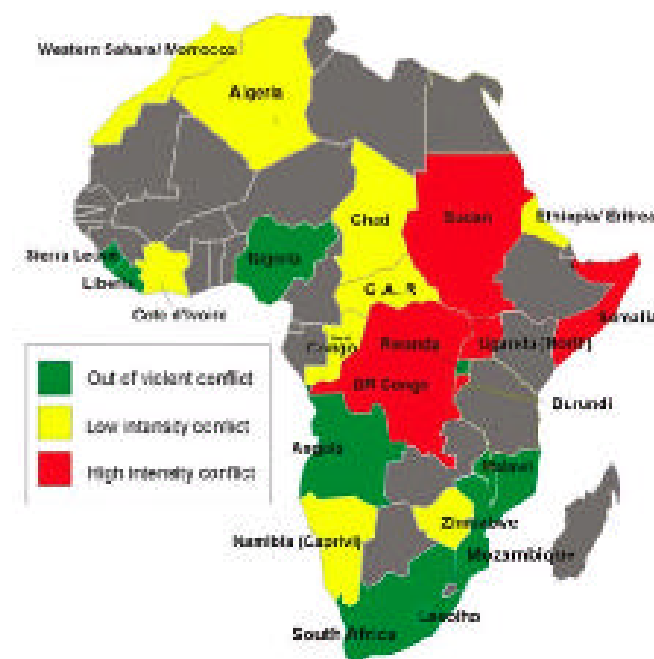
This “reverse causality” introduces a new set of variables, allowing environmental degradation to be reviewed “as part of a complex web of social, political and economic variables”, producing, in the end, a more sophisticated analysis. More recently, promising research is being carried out in many northern and southern research organisations such as the African Centre for Technology Studies (ACTS) and the International Institute for Security Studies (ISS). One comprehensive example that explores the interlinkages between conflict and the environment is *Scarcity and Surfeit: The Ecology of Africa’s Conflicts* (2002). Overall, research by key individuals exploring ecological factors in conflict has encouraged a wider recognition among development and security fields that the environment may enhance societal conflicts. This area of inquiry is still relatively small, and direct research on climate change and security more so; nonetheless, it is important to consider the social implications of a changing climate, when it would otherwise not be deemed relevant in conflict studies.

## Climate Change and Security

As explained above, environmental problems such as climate change do not necessarily lead to conflict between or within countries. Indeed, climate change is only a threat to those countries with physical, structural and/or social vulnerabilities that hinder their ability to adapt to a changing climate. However, in those instances where countries and groups are vulnerable to climate change, one of the societal impacts may be to either create or enhance conflict between groups. And even though this impact may be indirect, the effect of climate change on regional and local-level security may be no less severe.

For the first time in 2003, the US Pentagon released a report acknowledging the potential for climate change to decrease global security. In particular, climate variability “could potentially destabilise the geo-political environment, leading to skirmishes, battles, and even war due to resource constraints” such as food shortages, availability of fresh water, and disrupted energy supplies. Moreover, the report demonstrated how local and regional conflicts in other parts of the world, especially Africa, could impact a strong industrialised country like the United States. The report is still littered with the language of traditional military study, focusing on interstate war and national security. However, it is promising to see the inclusion of climate change in such security studies.

**Figure 1: Conflict in Africa\***



\* Taken by from Presentation by G. Machel at the *Assuring Food and Nutrition Security in Africa by 2020*, entitled *Mitigating, Preventing and Ending Conflicts in Africa*. April 1, 2004.

Specific climate change impacts on security and societal conflict is difficult to predict because of the complex interaction of societal, economic, political and ecological factors, and the various manifestations of conflict. The following are a summary of possible impacts that have been highlighted in the literature (Please also see Box – for an indepth illustration of climate change and environmental refugees).

**Environmental refugees: How big is the problem and how should they be protected?  
Source: Andrew Simms, New Economics Foundation (nef)**

Hysteria walks in the footsteps of refugees and immigrants. In Europe, barely a day passes without scare stories of crime, fraud, and intolerable burdens placed on public services. However, there is considerable evidence to the contrary. That immigrants, in fact, have always and continue to make, a vital contribution to Europe's economy.

But amidst the irrational fear is a deeper, less researched irony. It is now the case that the numbers of refugees could be about to increase dramatically over coming years as a direct result of the way that people in wealthy countries lead their lives.

Global warming, more than war or political upheaval, stands to displace many millions of people. And, its key driver is the fossil-fuel-intensive lifestyles that we enjoy so much.

Environmental refugees are already with us. They are people who have been forced to flee their homes and even cross borders primarily because of environmental factors such as extreme weather events, drought, and desertification. There are probably more of them already than their 'political' counterpart – 25 million environmental refugees in the mid-990s, according to the last best estimate, compared to around 22 million conventional refugees at the same time. Yet the real scale of the problem today suffers a lack of adequate data. By 2050, mostly due to the likely effects of global warming, there could be over 150 million.

The effects of this scale of population movements is likely to be highly destabilising to the global community unless they are carefully managed. Without action, the countries least responsible for creating the problem – poor developing nations who already are the major recipients of refugee flows – stand to carry the largest share of additional costs associated with environmental refugees. For example, as a consequence of global warming, Bangladesh, one of the poorest countries in the world, expects to have around 20 million such environmental refugees in the coming years.

Yet much is barely understood about what actual impacts and burdens there will be, or about how the international community will handle those who are displaced.

The 1951 Refugee Convention, for example, does not mention environmental refugees. However, arguably, they could be covered by the general nature of the language used in the convention. People can claim refugee status where persecutory action by states leads to the oppression of individuals. The environment can certainly be used as a tool to harm, as in the cases of flooded valleys, relocation to marginal unproductive land or the destruction of livelihoods through deforestation, but this would represent a novel interpretation of international law in the context of protecting refugees. Even further, policies that either fail to abate, or worsen, global warming could fall into the category of 'environmental persecution.'

Although they do not confer any legal status, the UN's Guiding Principles on Internal Displacement are a widely used tool that consolidates existing principles of human rights and international humanitarian and refugee law. It then applies these principles to the needs of people forced to leave their homes but remaining within their countries of origin – including as a result of natural or human-made disasters such as climate change. But, in certain circumstances, however, the suggestion that the solution must lie purely at the national level could be absurd, since the national level may be under water. According to one study, at least five small island states are at risk of ceasing to exist.

There are several other serious unanswered questions. What will happen to the exclusive

economic zones of such countries and what status and identity will their populations have? Where whole nations become uninhabitable, should they have new sovereign lands carved out for them in other states? Without proper environmental refugee status, will the world have to create lots of new little Israel's for the environmentally displaced? Or would they become the first true, World Citizens? If there is no state left, how can the state protect its citizens?

Sea-level rise in the range expected by the IPCC would devastate the Maldives. Without real international legal protection, their people could become potentially resented minorities in Sri Lanka, itself threatened, or India, with enormous problems of its own. On the small South Pacific island of Tuvalu people already have an *ad hoc* agreement with New Zealand to allow phased relocation. Up to 10 million could be displaced in the Philippines, millions more in Cambodia, Thailand, Egypt, China, across Latin America, and the list goes on. Creating new legal obligations for states to accept environmental refugees would be one way to ensure that industrialised countries accept the unintended consequences of their fossil fuel intensive lifestyle choices.

Just as the 1951 Geneva Refugee Convention provides protection for people fleeing persecution, a new international treaty could address the current gap in the international legal system by conferring special status and rights on environmental refugees, forced to flee their country of origin either because it no longer exists or cannot meet their needs due to the scale of climate change impacts. But the details of such an approach are yet to be properly investigated.

Numerous poor countries already cannot afford to meet the basic needs of their people. Without status, environmental refugees could be condemned by a global problem to a national economic and geographical lottery, and to the patchwork availability of resources and the application of immigration policies. There is a wide acceptance that current national policies would not be remotely capable of handling the scale of the problem. Environmental refugees need recognising, and the problem needs understanding and managing before it manages us.

*Adapted from Environmental Refugees: the case for recognition, by Andrew Simms and Molly Conisbee, published by nef (new economics foundation)*

Climate change is expected to undermine certain agricultural regions, especially in the tropic, leading to population migration and urbanisation. Large-scale migration may create or exacerbate conflict between groups, especially where ethnic tensions already exist, and resources are scarce. Urbanisation may also create societal conflict within cities and increase crime. Where there exists socio-economic division within countries, climate change may encourage further resource capture of key resources, fuelling radical social movements (Rogers). Overall, climate change may not “create entirely new social and security consequences, but more enhance existing instabilities” (Rogers, p100). As a result, climate change adaptation measures should focus on existing conflict-prone and unstable regions where conflict may be exacerbated by changing climate. Furthermore, research into social, political and economic adaptation measures, especially those that build institutional strength, fair legal codes of practice and the rule of law would go along way to minimise societal conflict from resource scarcity.

## References

- Buzan, B., Waeber, O., de Wilde, J., *Security – A New Framework for Analysis*, Lynne Rienner Publishers, Inc., London, UK, 1998.
- Clinton, Bill. Address. National Academy of Science. White House. 29 June 1994.
- Doyle, Timothy and Doug McEachern. *Environment and Politics*. 2nd Edition. London: Routledge, 2001.
- Gleditsch, Nils Petter. "Armed Conflict and the Environment: A Critique of the Literature." *Journal of Peace Research* 35.3(1998): 381-400.
- Gowdy, John. "Economic Concepts of Sustainability: Relocating Economic Activity with Society and Environment." In Egon Becker and Thomas Jahn, eds., *Sustainability and the Social Sciences: A Cross-Disciplinary Approach to Integrating Environmental Considerations into Theoretical Reorientation*. London: Zed Books, 1999.
- Gurr, Ted Robert. *Why Men Rebel*. Princeton: Princeton UP, 1970.
- Hartmann, Betsy. "Population, Environment and Security: A New Trinity" *Environment and Urbanization* 10.2(1998): 113-127.
- Hartmann, E. (2002) *Strategic Scarcity: The Origins and Impacts of Environmental Conflict Ideas*. PhD Dissertation. Development Studies Institute. London School of Economics and Political Science. London, UK.
- Homer-Dixon, T. "On the Threshold: Environmental Changes as Causes of Acute Conflict", *International Security* 16.2(1991): 76-116.
- Homer-Dixon, T. "Environmental Scarcities and Violent Conflict: Evidence from Cases" *International Security* 19.1(1994): 5-40.
- Homer-Dixon, T. *The Ingenuity Gap*. Vancouver: Vintage Books, 2001.
- Homer-Dixon, T. *Environment, Scarcity, and Violence*. Princeton: Princeton UP, 1999.
- Homer-Dixon, T., J. Boutwell and G. Rathjens. "Environmental Change and Violent Conflict" *Scientific American* 268(1993): 38-45.
- Huggins, C. (2003) "Ecological Sources of Conflicts in Sub-Saharan Africa: Linking Theory to Practice" *Eco-Conflicts* 2(3): pp8.
- Kaplan, Robert D. "The Coming Anarchy" *Atlantic Monthly* 273 (1994): 44-76.
- Le Billon, Philippe "The Political Ecology of War: Natural Resources and Armed Conflicts" *Political Geography* 20 (2001): 561-584.
- Levy, Marc A. "Is the Environment a National Security Issue?" *International Security* 20.2 (1995): 35-63.
- Lind, J. and K. Sturman, eds. (2002), *Scarcity and Surfeit: The Ecology of Africa's Conflicts*. South Africa: Institute for Security Studies.



- Lind, J. (2002) "Report of the Consultative Session and Regional Conference on the Ecological Sources of Conflict in Sub-Saharan Africa" *Eco-Conflicts* 2(1): pp4.
- McDonald, David A. "Lest the Rhetoric Begin: Migration, Population and the Environment in Southern Africa" *Geoforum* 30 (1999): 13-25.
- McNicoll, Geoffrey. Rev. of *Dangerous Intersections: Feminist Perspectives on Population, Environment, and Development*, a Project of the Committee on Women, Population, and the Environment. *Population and Development Review* 25.1(1999): 186.
- Musahara, H. and C. Huggina (2004) "Land Reform, Land Scarcity and Post Conflict Reconstruction: A Case of Rwanda" *Eco-Conflicts* 3(3): pp4.
- Ostrauskaite, R., 2001, *Environmental Security as an Ambiguous Symbol: Can We Securitize the Environment*, in Rubikon E-Journal, December, 2001. [<http://venus.ci.uw.edu.pl/~rubikon/forum/rasa2.htm>]
- Peluso, Nancy Lee and Michael Watts, eds. *Violent Environments*. Ithaca: Cornell UP, 2001.
- Porto, Joao Gomes (2002) "Contemporary Conflict Analysis in Perspective." In J. Lind and K. Sturman, eds., *Scarcity and Surfeit: The Ecology of Africa's Conflicts*. South Africa: Institute for Security Studies.
- Raad, Dana Firas, Sanjeev Khagram, and William Clark "From Human Security and the Environment To Comprehensive Security and Sustainable Development." An Input to the *Global Commission on Human Security*. August 2002.
- Rogers, P. (2004) Climate Change and Security. *IDS Bulletin Climate Change and Development* 35(3), 98-101.
- Schwartz, P. and D. Randall (2003). "An Abrupt Climate Change Scenario and Its Implications for United States National Security." U.S Pentagon Report released in October 2003.
- Smith, Dan. "Trends and Causes of Armed Conflict." *The Berghof Handbook for Conflict Transformation*. July 2000. 3 February 2003 <<http://www.berghof-center.org/handbook/smith/index.htm>>.
- Spector, Bertram I. "Transboundary Environmental Disputes." Ed. Andrew J. Goodpaster. *When Diplomacy Is Not Enough: Managing Multinational Military Interventions*. July 1996. 3 February 2003 <<http://wwics.si.edu/subsites/ccpdc/pubs/zart/ch9.htm>>.
- Toset, Hans, Nils Gleditsch, and Håvard Hegre "Shared Rivers and Interstate Conflict" *Political Geography* 19(2000): 971-996.
- Turton, Anthony and Roland Henwood, eds. *Hydropolitics In the Developing World: A Southern African Perspective*. Pretoria: African Water Issues Research Unit, 2002.
- Zeiton, M. (2004) "The Conflict vs. Cooperation Paradox: Fighting Over or Sharing of Palestinian-Israeli Groundwater?" submitted for publication.

Zeiton, M. (2004) "Pure Water: Secured or Violated?" submitted for publication.