# advantage

#### While the American Electric Power decision greenlighted regulations, it has closed the door on compensatory for those seeking climate justice.

**Burkett 11** - Professor of Law @ University of Hawaii [Maxine Burkett, “Climate Justice and the Elusive Climate Tort,” The Yale Law Journal Online, 121 Yale L.J. Online 115 (2011), pg. http://yalelawjournal.org/2011/09/13/burkett.html.

The Supreme Court’s decision in [American Electric Power Co. v. Connecticut (AEP)](http://scholar.google.com/scholar_case?case=9455424459231204577) closes another door for those most vulnerable to climate change. The corrective justice goals of tort law and the associated possibilities for redress—particularly vital to the most vulnerable—remain elusive due to the Court’s restricted view of tort law’s relevance to climate change. This Essay analyzes these climate justice implications of AEP.

[The field of “climate justice” (CJ) is concerned with the intersection of race and/or indigeneity, poverty, and climate change. It also recognizes the direct kinship between social inequality and environmental degradation.](http://www.buffalolawreview.org/past_issues/56_1/Burkett%20Web%2056_1.pdf) The term “climate vulnerable,” the subject of CJ, describes those communities or nation-states that have a particularly acute exposure to present and forecasted climatic changes. [That increased vulnerability is due to either the nature and degree of climate impacts’ forecast and/or the preexisting socioeconomic vulnerabilities that climate impacts amplify.](http://www.hawaii.edu/publichealth/ecohealth/si/course-indighlth/readings/Climate%20Reparations.Burkett.pdf) Underscoring the “justice” element, these most vulnerable populations are also the least responsible for the emissions that fuel anthropogenic climate change.

The Essay argues that the common law nuisance claims rejected by the Court in AEP provide an important mechanism for the climate vulnerable to achieve corrective justice. Corrective justice is one of the most important goals of tort law because of its focus on the relationship between the tortfeasor and victim. [While there are myriad interpretations of corrective justice theory and its application,](http://ojls.oxfordjournals.org/content/28/3/475.full.pdf%2Bhtml) this approach at its core counsels simply that individuals who are responsible for the wrongful losses of others have a duty to repair those losses. Further, rectification of harms suffered can help restore the moral balance upset by the externalized costs that climate change inflicts on individuals and communities. The corollary, therefore, is that tort law should provide a venue and possible damages remedy for CJ plaintiffs whose claims—namely, injuries to life and property—demand compensation from the worst offenders.

[As Professor Osofsky explains in her commentary,](http://yalelawjournal.org/2011/09/13/osofsky.html) the AEP Court explicitly [endorses the regulatory route for addressing emissions that contribute to climate change, rather than providing a parallel track in the courts through injunction.](http://scholar.google.com/scholar_case?case=9455424459231204577) Even if a regulatory regime could achieve emissions reductions objectives more effectively than tort law, however, CJ claimants have lost the ability to confront major emitters and gain redress for their particular—and disproportionate—injuries. So while tort law, and the accompanying judicial process, introduces [the complex web of claims and potential defendants that Professor Gerrard describes,](http://yalelawjournal.org/2011/09/13/gerrard.html) it also provides a unique way for CJ claimants to face major emitters, argue that they have been injured, and demonstrate that defendants have an obligation to make amends for that wrong.

Public nuisance theory, in particular, serves as a potentially effective corrective justice mechanism for CJ claimants because it focuses on the nature of the harms plaintiffs suffer. [Native Village of Kivalina v. ExxonMobil Corp.,](http://scholar.google.com/scholar_case?case=8475485648638796860) another pending public nuisance case that faces an uphill battle after AEP, is a paradigmatic example of CJ by virtue of its plaintiffs and the nature of their claims. [Plaintiffs seek monetary damages for the past and ongoing emissions of several major oil, coal, gas and utility companies.](http://www.climatelaw.org/cases/country/us/kivalina/Kivalina%20Complaint.pdf) Kivalina has almost 400 residents, 97 percent of whom are Alaska Natives. The village is traditional Inupiat and is located at the tip of a six-mile-long barrier reef. [Plaintiffs allege that climate change has severely harmed Kivalina’s people and property by reducing the sea ice that acts as a protective barrier to coastal storms. The storms and waves are destroying the land with such severity that the entire community must now relocate further inland.](http://www.climatelaw.org/cases/country/us/kivalina/Kivalina%20Complaint.pdf) Government estimates have determined that the cost of relocation falls [between $95 million and $400 million.](http://www.climatelaw.org/cases/country/us/kivalina/Kivalina%20Complaint.pdf)

The Inupiat are among the most vulnerable to climate change and yet have produced insignificant emissions. The current regulatory infrastructure for reducing emissions does not respond to the specific needs of these plaintiffs. For them, a viable tort claim is a means to achieve compensation for the loss of their property and to facilitate their relocation. Public nuisance theory, with its emphasis on the unreasonableness of a plaintiff’s injury, provides an appropriate focus for understanding climate impact claims. Instead of assessing the worth of a defendant’s actions—often riddled with the politics of wealth and power—nuisance law shines a spotlight on the unprecedented events climate change introduces. [Public nuisance claims, as Professor Abate explains, may succeed where disparate impact litigation failed in the environmental justice context.](https://digital.lib.washington.edu/dspace-law/bitstream/handle/1773.1/343/Abate%20Author%20Copy.pdf?sequence=1) They can provide the specific relief—funding for physical relocation in this case—that these particular CJ plaintiffs deserve. Even with a comprehensive regulatory scheme for emissions reduction in place, public nuisance law should remain a means by which climate-impacted communities can seek compensation from major emitters.

[The decision in AEP forecloses federal common law public nuisance claims so long as the EPA retains regulatory authority over greenhouse gas emissions.](http://scholar.google.com/scholar_case?case=9455424459231204577) The opinion further states that, [even if the EPA decides not to regulate greenhouse gas emissions (or does so inadequately), the federal common law is not an available track to pursue such actions.](http://scholar.google.com/scholar_case?case=9455424459231204577) That stance may negatively impact the ability for any court to address the individual claims based on specific harms brought by CJ plaintiffs—claims that are critical for achieving redress for these vulnerable communities.

The Court’s decision also betrays a skittishness in dealing with climate change suits generally, which underscores its failure to appreciate the deep injustices climate impacts introduce. Inexplicably, the AEP Court takes time in its relatively slender decision to inject doubt about elements of climate science. Abandoning the confidence demonstrated in Massachusetts v. EPA, [the Court cites to a magazine article expressing doubt about climate change impacts as a counterweight to the voluminous peer-reviewed articles on which the EPA based its findings.](http://www.nytimes.com/2009/03/29/magazine/29Dyson-t.html) Further, [the Court pauses again to make a facile indictment of all breathing, sentient beings.](http://scholar.google.com/scholar_case?case=9455424459231204577) In an instant, it dismisses the relative excess with which some have burned carbon for luxury and profit versus those who have for food and shelter.

This reluctance to address the justice elements of climate change is a legal phenomenon that exacerbates already dangerous climate effects. [Over twenty years ago, David Caron explained that the law can create feedback loops that, like their counterparts in the physical world, amplify certain climate trends.](http://works.bepress.com/cgi/viewcontent.cgi?article=1058&context=david_caron) A core purpose of law and the courts, particularly in a tort law context, is to provide recourse to those who have been wronged, especially if the wrongs involve the loss of life or property. If at every turn there is no avenue for remedy, the law and its institutions risk being perceived as an ineffective means to acknowledge and correct injustice—especially from the vantage point of the climate vulnerable. This denies the least responsible their day in court and further delays—if not, excludes—any possibility of being made whole.

Moving forward from the AEP decision, the lower courts have a choice about how they treat the unresolved alternative avenues for tort relief. If the lower courts make the distinction between the injunctive relief sought in AEP and the compensatory relief sought in Kivalina and recognize the corrective potential of compensation claims and their role in administering the process, the disparately impacted may enjoy appropriate recourse. Opening their doors to climate tort claims would be the courts’ distinct contribution to what will hopefully be a diverse and multi-layered commitment to rectifying, at least in part, the losses of the climate vulnerable.

#### Using damages to support domestic clean development supports indigenous sustainable energy. This builds institutions dedicated to climate justice.

**Burkett 08** - Professor of law @ University of Colorado [Maxine Burkett, “Just Solutions to Climate Change: A Climate Justice Proposal for a Domestic Clean Development Mechanism,” Buffalo Law Review, 56 Buffalo L. Rev. 169, April 2008

There are as many possibilities in rural communities.247 Native wind projects, for example, are the most well-established cooperatives just waiting for a formal market, which the dCDM would provide. According to Winona LaDuke, Native American activist and environmental justice advocate, native people have their eyes on the horizon.248 There is a movement for local control of energy as wind and solar projects proliferate throughout native lands. Specifically, there is a push for the creation of distributed energy systems with which local households and businesses can produce power and sell excess energy onto the grid.249 This locality-based approach emphasizes small-scale and dispersed-alternatives generation, providing the possibility of production at the tribal level.250 LaDuke perfectly summarizes the intersection of race, poverty, and just solutions, solutions that lack only the right of entry. She writes:

The reality is that this region of North America has more wind power potential than almost anywhere in the world. Twenty-three Indian tribes have more than 300 gigawatts of wind generating potential. That’s equal to over half of present U.S. installed electrical capacity. Those tribes live in some of the poorest counties in the country, yet the wind turbines they are putting up could power America—if they had more markets and access to power lines.251 Again, market access would be the very purpose and the incredible value of the dCDM.

Currently, significant tribe-based initiatives under NativeEnergy have begun selling renewable energy credits or “green tags” on a more ad hoc basis. The Rosebud Sioux, a founding member of the Intertribal Council on Utility Policy (COUP) in South Dakota, “pioneered the development of green power financing through the up-front sale of green tags (or renewable energy credits . . . RECs).”252 NativeEnergy markets the tags to buyers who seek to reduce domestic carbon emissions while financially supporting tribal renewables projects. Bob Gough describes the end product as “sustainable homeland economies.”253 “Village power models” can develop renewables technology designed for remote off-grid applications, serving the grossly underserved on Indian lands, while restoring the balance upset by environmental and climate injustices.

The dCDM would ensure a long-term stable revenue source for projects that are already proceeding in a CDM-like fashion.254 In its expansion phase, NativeEnergy envisions “further development of private marketing strategies for the sale of green power, green tags and pollution credits”—all needed to support development of NativeEnergy projects.255 The market share potential is great, as the Intertribal COUP presently assesses the wind potential in the Great Plains Indian reservations and conservatively estimates an energy generation of 530 billion kilowatt-hours annually.256 Sustainable home economies can be fostered and advanced with the support of an independent, firmly established market infrastructure—the dCDM.

#### We have lost the war to prevent warming. We must adapt our legal reasoning if we want to marshal the resources needed to cope

**Craig 10** - Professor of Law & Associate Dean for Environmental Programs @ Florida State University [Robin Kundis Craig, “'Stationarity is Dead' - Long Live Transformation: Five Principles for Climate Change Adaptation,” Harvard Environmental Law Review, Vol. 34, No. 1, 2010, pp. 9-75

Climate change is creating positive feedback loops that may irreversibly push ecosystems over ecological thresholds, destroying coupled socio-ecological systems. In January 2009, the U.S. Climate Change Science Program ("USCCSP") reported that the Arctic tundra represents a "clear example" of climate change pushing an ecosystem beyond an ecological threshold. 21 Warmer temperatures in the Arctic reduces the duration of snow cover, which in turn reduces the tundra's ability to reflect the sun's energy, leading to an "amplified, positive feedback effect. '22 The result has been "a relatively sudden, domino-like chain of events that result in conversion of the arctic tundra to shrubland, triggered by a relatively slight increase in temperature," 23 and the consequences for people living in these areas have been severe. For example, the Inupiat Eskimo village of Kivalina, Alaska, is suing for the costs of moving elsewhere, in response to the steady erosion of the village itself.24 Similarly, most Canadian Inuit live near the coast, on lands that exist only because of permafrost. Warming Arctic conditions threaten to deprive them of their homelands.25

Thus, a variety of natural systems and the humans who depend on them - what are termed socio-ecological systems26 - are vulnerable to climate change impacts. While developing and implementing successful mitigation strategies clearly remains critical in the quest to avoid worst-case climate change scenarios, we have passed the point where mitigation efforts alone can deal with the problems that climate change is creating.27 Because of "committed" warming - climate change that will occur regardless of the world's success in implementing mitigation measures, a result of the already accumulated greenhouse gases ("GHGs") in the atmosphere 28 - what happens to socio ecological systems over the next decades, and most likely over the next few centuries, will largely be beyond human control. The time to start preparing for these changes is now, by making adaptation part of a national climate change policy.

Nevertheless, American environmental law and policy are not keeping up with climate change impacts and the need for adaptation.29 To be sure, adjustments to existing analysis requirements are relatively easy, as when the Eastern District of California ordered the FWS to consider the impacts of climate change in its Biological Opinion under the ESA.30 Agencies and courts have also already incorporated similar climate change analyses into the National Environmental Policy Act's ("NEPA") Environmental Impact Statement ("EIS") requirement3 ' and similar requirements in other statutes. 32

Even so, adapting law to a world of continuing climate change impacts will be a far more complicated task than addressing mitigation. When the law moves beyond analysis requirements to actual environmental regulation and natural resource management,33 it will find itself in the increasingly uncomfortable world of changing complex systems and complex adaptive management - a world of unpredictability, poorly understood and changing feedback mechanisms, nonlinear changes, and ecological thresholds. As noted, climate change alters baseline ecosystem conditions in ways that are currently beyond immediate human control,34 regardless of mitigation efforts. These baseline conditions include air, water, and land temperatures; hydrological conditions, including the form, timing, quality, and amount of precipitation, runoff, and groundwater flow; soil conditions; and air quality. Alterations in these basic ecological elements, in turn, are prompting shifts and rearrangements of species, food webs, ecosystem functions, and ecosystem services.35 Climate change thus complicates and even obliterates familiar ecologies, with regulatory and management consequences.

Nor are these regulatory and management consequences an as-yet-still hypothetical problem. In February 2008, a group of researchers noted in Science that current water resource management in the developed world is grounded in the concept of stationarity - "the idea that natural systems fluctuate within an unchanging envelope of variability."36 However, because of climate change, "stationarity is dead."37 These researchers emphasized that impacts to water supplies from climate change are now projected to occur "during the multidecade lifetime of major water infrastructure projects" and are likely to be wide-ranging and pervasive, affecting every aspect of water supply.38 As a result, the researchers concluded that stationarity "should no longer serve as a central, default assumption in water-resource risk assessment and planning. Finding a suitable successor is crucial for human adaptation to changing climate."39

 Further, these authors realized the critical question is what a successor regime to stationarity should look like. 40 With the onset of climate change impacts, humans have decisively lost the capability - to the extent that we ever had it - to dictate the status of ecosystems and their services. As a result, and perhaps heretically, this Article argues that, for adaptation purposes, we are better off treating climate change impacts as a rather than as anthropogenic disturbances, 41 with a consequent shift in regulatory focus: we cannot prevent all of climate change's impacts,42 but we can certainly improve the efficiency and effectiveness of our responses to them. As this slow-moving tsunami 43 bears down on us, some loss is inevitable - but loss of everything is not. Climate change is creating a world of triage, best guesses, and shifting sands, and the sooner we start adapting legal regimes to these new regulatory and management realities, the sooner we can marshal energy and resources into actions that will help humans, species, and ecosystems cope with the changes that are coming. Pg. 13-16

#### A coping strategy is critical. Warming induced scarcity produces climate change hotspots.

**Marlow & Barcelos 11** - Co-Executive Directors of the Three Degrees Project at the University of Washington School of Law [Jennifer Marlow (JD from the University of Washington) & Jennifer Krencicki Barcelos (JD from the University of Washington), “Global Warring and the Permanent Dry: How heat threatens human security in a warmer world,” Seattle Journal of Environmental Law, 2011 Volume 1 Issue 19

2. Food and Water

Coupled with heat-related dangers to public health, the warmer world is likely to be a hungry world. Heat can be devastating to crops, and in many places, climate change is already reducing agricultural productivity. A recent newspaper headline, ripped from the front page of the San Francisco Chronicle’s business section, reads “World’s Wheat Crop Stressed.”25 According to the article, “Yields aren’t keeping up with a world growing hungrier. Crops are stunted in a world grown warmer. A devastating fungus, a wheat ‘rust,’ is spreading out of Africa, a grave threat to the food plant that covers more of the planet’s surface than any other.”26 The article continues, “In the face of leapfrogging prices, stagnating yields and shifting climate zones, wheat cannot be counted on to fill humankind’s stomach in the future as it has since at least 7000 BC.”27 The article is right to call attention to the multitude of social and scientific factors that combine to create food insecurity.

One such factor that will compound all of this for much of Africa will be desertification. It is estimated that by 2050, there could be less than ninety reliable crop-growing days per year in parts of sub-Saharan Africa.28 (See Fig. 2).

The warmer world will lead to reduced yields of many staple grains: wheat, maize, rice, and soybeans. A rule of thumb is that for every one degree Celsius increase in temperature, cereal grain crop yields will decline by about 10 percent.30 Importantly, this decline is attributable to temperature increases only; scientists did not factor in any changes in precipitation, pathogen responses, or other possible impacts on food production in their study. In hotter weather and with longer growing seasons, plants may mature faster, but overall yield is reduced.31

In addition, current research reveals that the rising temperatures associated with climate change could significantly reduce the protein content of many of the major grains that people depend on for survival.32 As Figure 2 indicates, some regions may benefit from climate change’s hotter temperatures, but much of the Global South will see reduced yields of crops that are already in scarce supply. And, according to the map, Russia’s crops were supposed to benefit from warmer weather.

The warmer world will also be a thirstier world. And there are alread a lot of thirsty people. Take water scarcity, in India, for example, where the magnitude of drying far exceeds the capacity of afterthought or charity to provide an adequate response as people kill each other with swords in the slums of Bhopal over access to limited freshwater. India’s 2009 record drought and shifting monsoon caused “the driest June for 83 years . . . exacerbating the effects of a widespread drought and setting neighbour against neighbour in a desperate fight for survival.”33 One hundred thousand people in Bhopal already rely entirely on the daily deliveryy of water from water tankers to meet their survival needs.34

The UN has warned for many years that water shortages will become one of the most pressing problems on the planet over the coming decades, with one report estimating that four billion people will be affected by 2050. What is happening in India, which has too many people in places where there is not enough water, is a foretaste of what is to come.35

Will we be delivering water to four billion people via tanker trucks in India? How about in the United States? The recent drought study by Dr. Dai mentioned earlier poses equal challenges for the United States, particularly for the Southwest.36 Although the United States has avoided significant drying over the past fifty years due to natural climate variations, much of the United States will experience severe drying within the next few decades.37 Imminent drying could cause water levels in the Colorado River and Lake Mead to drop, further endangering the water supply for the Southwest.38 Dr. Dai also predicts droughts of devastating severity by 2030 in southern Europe, Southeast Asia, Brazil, Chile, Australia, and a majority of Africa.39

3. Security

The warmer world is likely to be a less secure world. Looking beyond the public health imp,” acts of heat waves and the phenomenon of reduced agricultural productivity and water scarcity, the warmer world is going to be a more violent place. In fact, there is a phrase in psychology, “the heat hypothesis,” which is used to describe this very phenomenon.40 Studies of this relationship between human behavior and weather patterns date back to the time of Cicero (106–32 BC), although the topic was first empirically studied in the 1700s.41 Research by criminal psychologist Ehor Boyanowsky, a professor at Simon Fraser University, shows that “elevated ambient temperatures lead to increased brain temperatures that result in cognitive dysfunction, emotional stress, and aggression,” as well as increases in violent crime.42

According to another study by Iowa State psychologist Craig Anderson and sociologist Matthew DeLisi, “higher temperatures can increase aggression in myriad ways.”43 Based on their analysis of violent crime data for the period between 1950 and 2008, the researchers estimate that an increase of 4.4 degrees Celsius in the United States would result in more than 100,000 additional violent crimes nationwide per year.44 But, the researchers caution, regular heat-fueled aggression is only one part of the problem. Migration, when it does take place, is likely to lead to even more violent behavior that can take on various forms of civil unrest. As DeLisi notes, “displacement and migration of people across borders can potentially lead to a lot more human conflict.”45 He points out the example of a post-Hurricane Katrina spike in Houston homicides, which has been linked to spars between Houston gangs and those gangs displaced from New Orleans.46 The Katrina example may seem unique, but there is actually potential for increased violence across the world as shown in Figure 1. The map showcases how climate-induced environmental stresses will overlay one another and create or exacerbate political instability resulting in “climate change hot spots.” The areas that face water insecurity also face food insecurity and these factors combine and can lead to the forced migration of climate refugees.

Without adequate access to food and water, and with more violence and aggression, it is not hard to see how many people in the warmer world could be less secure. How will we cope with a climate-dominated future? What kinds of needs will we voice? As the 1994 United Nations Development Programme’s (UNDP) Human Development Report (HDR) describes:

For most people, a feeling of insecurity arises more from worries about daily life than from the dread of a cataclysmic world event. Will they and their families have enough to eat? Will they lose their jobs? Will their streets and neighborhoods be safe from crime? Will they be tortured by a repressive state? Will they become a victim of violence because of their gender? Will their religion or ethnic origin target them for persecution?47

Through its 1994 HDR, the UNDP promoted a new concept of security in the post-Cold War era, human security, as a more holistic alternative to the traditional twentieth century reliance on heavy militarization and notions of security centered on nation-states.48 Security in a warmer world must take on new meanings, and many traditional security institutions are now beginning to reexamine what this new security paradigm could look like.

Every year, Foreign Policy magazine collaborates with The Fund for Peace to create an index that evaluates the security of the world’s countries. In the summer of 2009, the index featured a special article devoted to the destabilizing effects of climate change. The article concludes, “[a]s global warming churns the world’s weather, it’s becoming increasingly clear that it’s time to start thinking about the long term. In doing so, the West may need to adopt an even broader definition of what it takes to protect itself from danger.”49 Challenging the common discourse about global security threats related to Pakistan, the article suggests that “[w]hen it comes to the stability of one of the world’s most volatile regions, it’s the fate of the Himalayan glaciers that should be keeping us awake at night.”50 Perhaps, the article suggests, climate change is on par with terrorism as a threat to the United States and the global world order. According to a recent New York Times article, a new type of national intelligence work is being founded on the assumption “that the 21st century will be shaped not just by competitive economic growth, but also by potentially disruptive scarcities—depletion of minerals; desertification of land; pollution or overuse of water; weather changes that kill fish and farms.”51 pg. 28-29

#### South Asia, China and the Andean region will become war zones. Conflicts will escalate

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The costs and consequences of climate change on our world will define the 21st century. Even if nations across our planet were to take immediate steps to rein in carbon emissions—an unlikely prospect—a warmer climate is inevitable. As the U.N. Intergovernmental Panel on Climate Change, or IPCC, noted in 2007, human-created “warming 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.”1

As these ill effects progress they will have serious implications for U.S. national security interests as well as global stability—extending from the sustainability of coastal military installations to the stability of nations that lack the resources, good governance, and resiliency needed to respond to the many adverse consequences of climate change. And as these effects accelerate, the stress will impact human migration and conflict around the world.

It is difficult to fully understand the detailed causes of migration and economic and political instability, but the growing evidence of links between climate change, migration, and conflict raise plenty of reasons for concern. This is why it’s time to start thinking about new and comprehensive answers to multifaceted crisis scenarios brought on or worsened by global climate change. As Achim Steiner, executive director of the U.N. Environment Program, argues, “The question we must continuously ask ourselves in the face of scientific complexity and uncertainty, but also growing evidence of climate change, is at what point precaution, common sense or prudent risk management demands action.”2 In the coming decades climate change will increasingly threaten humanity’s shared interests and collective security in many parts of the world, disproportionately affecting the globe’s least developed countries. Climate change will pose challenging social, political, and strategic questions for the many different multinational, regional, national, and nonprofit organizations dedicated to improving the human condition worldwide. Organizations as different as Amnesty International, the U.S. Agency for International Development, the World Bank, the International Rescue Committee, and the World Health Organization will all have to tackle directly the myriad effects of climate change.

Climate change also poses distinct challenges to U.S. national security. Recent intelligence reports and war games, including some conducted by the U.S. Department of Defense, conclude that over the next two or three decades, vulnerable regions (particularly sub-Saharan Africa, the Middle East, South and Southeast Asia) will face the prospect of food shortages, water crises, and catastrophic flooding driven by climate change. These developments could demand U.S., European, and international humanitarian relief or military responses, often the delivery vehicle for aid in crisis situations.

This report provides the foundation and overview for a series of papers focusing on the particular challenges posed by the cumulative effects of climate change, migration, and conflict in some of our world’s most complex environments. In the papers following this report, we plan to outline the effects of this nexus in northwest Africa, in India and Bangladesh, in the Andean region of South America, and in China. In this paper we detail that nexus across our planet and offer wide ranging recommendations about how the United States, its allies in the global community, and the community at large can deal with the coming climate-driven crises with comprehensive sustainable security solutions encompassing national security, diplomacy, and economic, social, and environmental development.

Here, we briefly summarize our arguments and our conclusions.

The nexus

The Arab Spring can be at least partly credited to climate change. Rising food prices and efforts by authoritarian regimes to crush political protests were linked first to food and then to political repression—two important motivators in the Arab makeover this past year.

To be sure, longstanding economic and social distress and lack of opportunity for so many Arab youth in the Middle East and across North Africa only needed a spark to ignite revolutions across the region. But environmental degradation and the movement of people from rural areas to already overcrowded cities alongside rising food prices enabled the cumulative effects of long-term economic and political failures to sweep across borders with remarkable agility. It does not require much foresight to acknowledge that other effects of climate change will add to the pressure in the decades to come. In particular the cumulative overlays of climate change with human migration driven by environmental crises, political conflict caused by this migration, and competition for more scarce resources will add new dimensions of complexity to existing and future crisis scenarios. It is thus critical to understand how governments plan to answer and prioritize these new threats from climate change, migration, and conflict.

Climate change

Climate change alone poses a daunting challenge. No matter what steps the global community takes to mitigate carbon emissions, a warmer climate is inevitable. The effects are already being felt today and will intensify as climate change worsens. All of the world’s regions and nations will experience some of the effects of this transformational challenge.

Here’s just one case in point: African states are likely to be the most vulnerable to multiple stresses, with up to 250 million people projected to suffer from water and food insecurity and, in low-lying areas, a rising sea level.3 As little as 1 percent of Africa’s land is located in low-lying coastal zones but this land supports 12 percent of its urban population.4

Furthermore, a majority of people in Africa live in lower altitudes—including the Sahel, the area just south of the Sahara—where the worst effects of water scarcity, hotter temperatures, and longer dry seasons are expected to occur.5 These developments may well be exacerbated by the lack of state and regional capacity to manage the effects of climate change. These same dynamics haunt many nations in Asia and the Americas, too, and the implications for developed countries such as the United States and much of Europe will be profound.

Migration

Migration adds another layer of complexity to the scenario. In the 21st century the world could see substantial numbers of climate migrants—people displaced by either the slow or sudden onset of the effects of climate change. The United Nations’ recent Human Development Report stated that, worldwide, there are already an estimated 700 million internal migrants—those leaving their homes within their own countries—a number that includes people whose migration isrelated to climate change and environmental factors. Overall migration across national borders is already at approximately 214 million people worldwide,6 with estimates of up to 20 million displaced in 2008 alone because of a rising sea level, desertification, and flooding.7

One expert, Oli Brown of the International Institute for Sustainable Development, predicts a tenfold increase in the current number of internally displaced persons and international refugees by 2050.8 It is important to acknowledge that there is no consensus on this estimate. In fact there is major disagreement among experts about how to identify climate as a causal factor in internal and international migration. But even though the root causes of human mobility are not always easy to decipher, the policy challenges posed by that movement are real. A 2009 report by the International Organization for Migration produced in cooperation with the United Nations University and the Climate Change, Environment and Migration Alliance cites numbers that range from “200 million to 1 billion migrants from climate change alone, by 2050,”9 arguing that “environmental drivers of migration are often coupled with economic, social and developmental factors that can accelerate and to a certain extent mask the impact of climate change.”

The report also notes that “migration can result from different environmental factors, among them gradual environmental degradation (including desertification, soil and coastal erosion) and natural disasters (such as earthquakes, floods or tropical storms).”10 (See box on page 15 for a more detailed definition of climate migrants.) Clearly, then, climate change is expected to aggravate many existing migratory pressures around the world. Indeed associated extreme weather events resulting in drought, floods, and disease are projected to increase the number of sudden humanitarian crises and disasters in areas least able to cope, such as those already mired in poverty or prone to conflict.11

Conflict

This final layer is the most unpredictable, both within nations and transnationally, and will force the United States and the international community to confront climate and migration challenges within an increasingly unstructured local or regional security environment. In contrast to the great power conflicts and the associated proxy wars that marked most of the 20th century, the immediate post- Cold War decades witnessed a diffusion of national security interests and threats. U.S. national security policy is increasingly integrating thinking about nonstate actors and nontraditional sources of conflict and instability, for example in the fight against Al Qaeda and its affiliated groups.

Climate change is among these newly visible issues sparking conflict. But because the direct link between conflict and climate change is unclear, awareness of the indirect links has yet to lead to substantial and sustained action to address its security implications. Still the potential for the changing climate to induce conflict or exacerbate existing instability in some of the world’s most vulnerable regions is now recognized in national security circles in the United States, although research gaps still exists in many places.

The climate-conflict nexus was highlighted with particular effect by the current U.S. administration’s security-planning reviews over the past two years, as well as the Center for Naval Analysis, which termed climate change a “threat multiplier,” indicating that it can exacerbate existing stresses and insecurity.12 The Pentagon’s latest Quadrennial Defense Review also recognized climate change as an “accelerant of instability or conflict,” highlighting the operational challenges that will confront U.S. and partner militaries amid a rising sea level, growing extreme weather events, and other anticipated effects of climate change.13 The U.S. Department of Defense has even voiced concern for American military installations that may be threatened by a rising sea level.14

There is also well-developed international analysis on these points. The United Kingdom’s 2010 Defense Review, for example, referenced the security aspects of climate change as an evolving challenge for militaries and policymakers. Additionally, in 2010, the Nigerian government referred to climate change as the “greatest environmental and humanitarian challenge facing the country this century,” demonstrating that climate change is no longer seen as solely scientific or environmental, but increasingly as a social and political issue cutting across all aspects of human development.15

As these three threads—climate change, migration, and conflict—interact more intensely, the consequences will be far-reaching and occasionally counterintuitive. It is impossible to predict the outcome of the Arab Spring movement, for example, but the blossoming of democracy in some countries and the demand for it in others is partly an unexpected result of the consequences of climate change on global food prices. On the other hand, the interplay of these factors will drive complex crisis situations in which domestic policy, international policy, humanitarian assistance, and security converge in new ways.

Areas of concern

Several regional hotspots frequently come up in the international debate on climate change, migration, and conflict. Climate migrants in northwest Africa, for example, are causing communities across the region to respond in different ways, often to the detriment of regional and international security concerns. Political and social instability in the region plays into the hands of organizations such as Al Qaeda in the Islamic Maghreb. And recent developments in Libya, especially the large number of weapons looted from depots after strongman Moammar Qaddafi’s regime fell— which still remain unaccounted for—are a threat to stability across North Africa. Effective solutions need not address all of these issues simultaneously but must recognize the layers of relationships among them. And these solutions must also recognize that these variables will not always intersect in predictable ways. While some migrants may flee floodplains, for example, others may migrate to them in search of greater opportunities in coastal urban areas.16

Bangladesh, already well known for its disastrous floods, faces rising waters in the future due to climate-driven glacial meltdowns in neighboring India. The effects can hardly be over. In December 2008 the National Defense University in Washington, D.C., ran an exercise that explored the impact of a flood that sent hundreds of thousands of refugees into neighboring India. The result: the exercise predicted a new wave of migration would touch off religious conflicts, encourage the spread of contagious diseases, and cause vast damage to infrastructure. India itself is not in a position to absorb climate-induced pressures—never mind foreign climate migrants. The country will contribute 22 percent of global population growth and have close to 1.6 billion inhabitants by 2050, causing demographic developments that are sure to spark waves of internal migration across the country.

Then there’s the Andean region of South America, where melting glaciers and snowcaps will drive climate, migration, and security concerns. The average rate of glacial melting has doubled over the past few years, according to the World Glacier Monitoring Service.17 Besides Peru, which faces the gravest consequences in Latin America, a number of other Andean countries will be massively affected, including Bolivia, Ecuador, and Colombia. This development will put water security, agricultural production, and power generation at risk—all factors that could prompt people to leave their homes and migrate. The IPCC report argues that the region is especially vulnerable because of its fragile ecosystem.18

Finally, China is now in its fourth decade of ever-growing internal migration, some of it driven in recent years by environmental change. Today, across its vast territory, China continues to experience the full spectrum of climate change related consequences that have the potential to continue to encourage such migration. The Center for a New American Security recently found that the consequences of climate change and continued internal migration in China include “water stress; increased droughts, flooding, or other severe events; increased coastal erosion and saltwater inundation; glacial melt in the Himala as that could affect hundreds of millions; and shifting agricultural zones”—all of which will affect food supplies. 19 Pg. 1-7

#### First, South Asia - Climate crisis there risks an all-out nuclear exchange that would decimate the region in minutes

**Brennan 08** – Lieutenant in the United States Navy [James F. Brennan, “The China-India-Pakistan Water Crisis: Prospects for Interstate Conflict,” Submitted in partial fulfillment of the requirements for the degree of MASTER OF ARTS IN SECURITY STUDIES (FAR EAST, SOUTHEAST ASIA, PACIFIC) from the NAVAL POSTGRADUATE SCHOOL, September 2008

India and Pakistan’s enduring rivalry provides the groundwork for an unpredictable relationship between these regional powers. The partition instilled a mutual distrust that persists today. Exacerbated by the growing water crisis, the potential for conflict between these countries is high. Furthermore, the possession of nuclear weapons by these countries raises the stakes of the game.

The potential for all-out nuclear exchange is low. However, the potential in light of serious disputes over water resources raises serious concerns for parties interested in maintaining regional security. So, it is important to ensure that water issues be considered in future diplomatic efforts to ensure regional stability. In other words, interested external powers should consider a proactive approach instead of a reactive one. The propensity between these countries for conflict makes a reactive approach undesirable. In the event of a nuclear exchange, China, India and Pakistan would be decimated in minutes and the long-term effects on regional security would last for decades to follow.

The stability of the South Asian region is important for a number of reasons. These countries have a history of tense relations that tend to lead to conflict. Therefore, in order to engage these countries effectively, it may be important to address them separately at first – similar to China’s current approach to regional relations.123 As South Asia approaches a water crisis, the 1960 Indus Water Treaty is a good starting point – as it appears to pose the most relevant challenge as far as large-scale engagement is concerned. If China and South Asia cannot settle potential disputes over water, it may be up to a fourth party, such as the United States, to motivate change. pg. 45-46

#### The war will not be limited. Indo-Sino-Paki war poses a unique extinction risk

**Robock & Toon 10** - Professor of climatology at Rutgers University & Chair of atmospheric and oceanic scienc­es @ University of Colorado-Boulder [Allan Robock (Director of Rutger’s Center for Environmental Prediction) & Owen Brian Toon (Fellow of the Laboratory for Atmospheric and Space Physics University of Colorado-Boulder, “Local Nuclear War,” Scientific American, January 2010 ] Ableism paraphrased

Why discuss this topic now that the cold war has ended? Because as other nations continue to acquire nuclear weapons, smaller, regional nu­clear wars could create a similar global catastro­phe. New analyses reveal that a conflict be­tween India and Pakistan, for example, in which 100 nuclear bombs were dropped on cities and industrial areas—only 0.4 percent of the world’s more than 25,000 warheads—would produce enough smoke to ~~cripple~~ destroy global agriculture. A regional war could cause widespread loss of life even in countries far away from the conflict.

Regional War Threatens the World

By deploying modern computers and modern cli­mate models, the two of us and our colleagues have shown that not only were the ideas of the 1980s correct but the effects would last for at least 10 years, much longer than previously thought. And by doing calculations that assess decades of time, only now possible with fast, current computers, and by including in our cal­culations the oceans and the entire atmosphere— also only now possible—we have found that the smoke from even a regional war would be heat­ed and lofted by the sun and remain suspended in the upper atmosphere for years, continuing to block sunlight and to cool the earth.

India and Pakistan, which together have more than 100 nuclear weapons, may be the most worrisome adversaries capable of a regional nu­clear conflict today. But other countries besides the U.S. and Russia (which have thousands) are well endowed: China, France and the U.K. have [has] hundreds of nuclear warheads; Israel has more than 80, North Korea has about 10 and Iran may well be trying to make its own. In 2004 this situation prompted one of us (Toon) and later Rich Turco of the University of California, Los Angeles, both veterans of the 1980s investiga­tions, to begin evaluating what the global envi­ronmental effects of a regional nuclear war would be and to take as our test case an engage­ment between India and Pakistan.

The latest estimates by David Albright of the Institute for Science and International Security and by Robert S. Norris of the Natural Resourc­es Defense Council are that India has 50 to 60 assembled weapons (with enough plutonium for 100) and that Pakistan has 60 weapons. Both countries continue to increase their arsenals. In­dian and Pakistani nuclear weapons tests indi­cate that the yield of the warheads would be sim­ilar to the 15-kiloton explosive yield (equivalent to 15,000 tons of TNT) of the bomb the U.S. used on Hiroshima.

Toon and Turco, along with Charles Bardeen, now at the National Center for Atmospheric Re­search, modeled what would happen if 50 Hiro­shima-size bombs were dropped across the high­est population-density targets in Pakistan and if 50 similar bombs were also dropped across In­dia. Some people maintain that nuclear weapons would be used in only a measured way. But in the wake of chaos, fear and broken communications that would occur once a nuclear war began, we doubt leaders would limit attacks in any rational manner. This likelihood is particularly true for Pakistan, which is small and could be quickly overrun in a conventional conflict. Peter R. La­voy of the Naval Postgraduate School, for exam­ple, has analyzed the ways in which a conflict be­tween India and Pakistan might occur and ar­gues that Pakistan could face a decision to use all its nuclear arsenal quickly before India swamps its military bases with traditional forces. Pg. 74-75

#### Second, Chinese climate migration – It risks a war over the Russian Far East

**Weitz 12** - Director of the Hudson Institute’s Center for Political-Military Analysis [Richard Weitz, “Superpower Symbiosis: The Russia-China Axis,” World Affairs, [November/December 2012](http://www.worldaffairsjournal.org/issue/novemberdecember-2012), pg. http://tinyurl.com/cjcc3v2

A major worsening of China-Russia ties would actually represent a regression to the mean. The modern Chinese-Russian relationship has most often been characterized by bloody wars, imperial conquests, and mutual denunciations. It has only been during the last twenty years, when Russian power had been decapitated by its lost Soviet empire and China has found itself a rising economic—but still militarily weak—power that the two countries have managed to achieve a harmonious balance in their relationship. While China now has the world’s second-largest economy, Russia has the world’s second most powerful military, thanks largely to its vast reserves of nuclear weapons. But China could soon surpass Russia in terms of conventional military. Under these conditions, Moscow could well join other countries bordering China in pursuing a containment strategy designed to balance, though not prevent, China’s rising power.

Heightened China-Russia tensions over border regions are also a possibility. The demographic disparity that exists between the Russian Far East and northern China invariably raises the question of whether Chinese nationals will move northward to exploit the natural riches of under-populated eastern Russia. Border tensions could increase if poorly managed development, combined with pollution, land seizures, and climate change, drive poor Chinese peasants into Russian territory. Russians no longer worry about a potential military clash with China over border issues, but they still fear that the combination of four factors—the declining ethnic Russian population in the Russian Far East, Chinese interest in acquiring greater access to the energy and other natural resources of the region, the growing disparity in the aggregate size of the Chinese and Russian national economies due to China’s higher growth rate, and suspected large-scale illegal Chinese immigration into the Russian Far East—will result in China’s de facto peaceful annexation of large parts of eastern Russia. Although the Russian Federation is the largest country in the world in terms of territory, China has more than nine times as many people.

With the end of the NATO combat role in Afghanistan, an immediate source of tension could be Russian pressure on China to cease its buck-passing and join Russia in assuming the burden of stabilizing that country. Should US power in the Pacific falter, China and Russia might also become natural rivals for the allegiance of the weak states of East Asia looking for a new great-power patron. But for now such prospects linger in the background as Beijing and Moscow savor a far smoother relationship than the one they shared back in the day, when they competed to see which would achieve the one true communism.

#### Russia will fight to control the RFE. It can’t win without nuclear escalation

**Rousseau 12** - Professor and Chair of Political Science and International Relations @ Khazar University [Richard Rousseau, “Will China Colonize and Incorporate Siberia?,” Harvard International Review, July 9, 2012 | 12:07 AM, pg. http://tinyurl.com/c55zp3n

If Siberia is in fact awaiting a Chinese Future, a number of scenarios might unfold over the next decade. The worst-case scenario for Russia is not only the continuation of ethnic Chinese migration but a substantial rise of it in response to changes taking place in northern China. Russia’s Far East would then become predominantly inhabited by ethnics Chinese, resulting in a decisive change in the nature of a region already far-removed from European Russia.

Military aggression, which seems highly improbable for now, cannot be totally ruled out in the long term. Although it is a fact that the Russian army lacks the latest modern weaponry, historically its strength has always lain in its number of troops, not in its cutting-edge technology. At Poltava in 1709, Galicia in 1914 and Stalingrad in 1942, the Russians did not liberate or retake these lands because they had more advanced military technology at their disposal or developed cleverer tactics, but rather because they had a large numerical superiority over the enemy. This numerical advantage would dissipate entirely in the face of the Chinese armed forces, which are ten times larger. The inferiority of Russia’s conventional forces is also aggravated by the shortage of conscripts, a consequence of the country’s demographic decline. However, with regards to nuclear weapons, Russia’s total of approximately 10,000 nuclear warheads surpasses China‘s total of approximately 240 nuclear warheads. The Russian economy may lag far behind China’s, but the Russian Army is still a frightening force and should not be underestimated.

For instance, in June and July 2010, Russian armed forces conducted Vostok 2010, a series of 10-day unprecedented military exercises. These were made up of a set of strategic exercises that involved 20,000 troops, up to 70 warplanes and 30 warships from the Far Eastern, Siberian and Volga-Urals military districts, as well as the Pacific Fleet. Designed primarily to put the military to the test, these wargames were also a warning to Chinese military officials who were present during the exercise. Vostok 2010 simulated a response to a possible attack from China. It included the firing of live ammunition, simulated airborne assaults and amphibious assault landings.

#### Russian nuclear attack leaves the earth uninhabitable

**Starr 10** - Director of Clinical Laboratory Science Program @ University of Missouri [Steven Starr (Senior scientist @ Physicians for Social Responsibility.), “The climatic consequences of nuclear war” | Bulletin of the Atomic Scientists, 12 March 2010, Pg. http://www.thebulletin.org/web-edition/op-eds/the-climatic-consequences-of-nuclear-war]

This isn't a question to be avoided. Recent scientific studies have found that a war fought with the deployed U.S. and Russian nuclear arsenals would **leave Earth** virtually **uninhabitable**. In fact, NASA computer models have shown that even a "successful" **first strike** by Washington or Moscow would inflict catastrophic environmental damage that would make agriculture impossible and cause mass starvation. Similarly, in the January Scientific American, Alan Robock and Brian Toon, the foremost experts on the climatic impact of nuclear war, warn that the environmental consequences of a "regional" nuclear war would cause a global famine that could kill one billion people.

#### Third, The Andes water crisis – US response will set a precedent. Lack of adaptation assistance will force US military escalation

**Somerville 11** - Medill National Security Reporting Project [Heather Somerville (Graduate student at Northwestern's Medill School of Journalism, perusing a Masters of Science in Journalism), “[Losing the Andes glaciers](http://global-warning.org/main/peru/),” January 17, 2011 12:01 am, Global Warming: A project of a National Security Journalism Initiative, pg. http://global-warning.org/main/peru/

HUARAZ, Peru — Glacier melt hasn’t caused a national crisis in Peru, yet. But high in the Andes, rising temperatures and changes in water supply have decimated crops, killed fish stocks and forced entire villages to question how they will survive for another generation.

U.S. officials are watching closely because without quick intervention, they say, the South American nation could become an unfortunate case study in how climate change can destabilize a strategically important region and, in turn, create conditions that pose a national security threat to Americans thousands of miles away.

“Think what it would be like if the Andes glaciers were gone and we had millions and millions of hungry and thirsty Southern neighbors,” said former CIA Director R. James Woolsey. “It would not be an easy thing to deal with.”

Glaciers in the South American Andes are melting faster than many scientists predicted, causing a dramatic change in the region’s availability of water for drinking, irrigation and electricity. Some climate change experts estimate entire glaciers will disappear in 10 years due to rising global temperatures, threatening to create instability across the globe long before their ultimate demise.

That’s particularly the case in Peru, where glacier melt has begun to deplete crops, displace communities, cause widespread drinking water shortages, destabilize hydroelectric power, diminish trade and affect transportation and tourism. The trend is expected to cause regional conflict, economic crises, increased crime, broken infrastructure and food insecurity.

Without substantial foreign assistance within the next five years, the disappearance of Peru’s glaciers could lead to a social and economic disaster, said Alberto Hart, climate change adviser at Peru’s Ministry of Foreign Affairs. It’s also become a policy and funding challenge for the Obama administration, which must decide whether to send money, development assistance and possibly even military help south to an important democratic ally on a continent where Chinese and Iranian influence is growing, and anti-U.S. sentiment permeates certain regimes.

Other U.S. allies vulnerable to the impacts of climate change will be paying close attention to how the U.S. responds. Peru’s crisis could set a precedent for how the U.S. uses diplomacy, foreign aid and the military to address the climate change threats around the world.

“We may think that current wait-and-see policies are adequate to the task,” said Chad Briggs, Minerva Chair for Energy and Environmental Security with the U.S. Air Force. “Peru may be a looming example of how that is not the case.”

Senior U.S. diplomatic and military officials acknowledge the importance of helping Peru and other nations respond. Secretary of State Hillary Clinton, State Department Climate Change Envoy Todd Stern and Western Hemisphere Assistant Secretary of State for the Western Hemisphere Arturo Valenzuela have made repeated trips to the region since early 2010 to discuss climate change and energy security.

Climate change is “a significant threat” to the region, and the U.S. must “really come to terms” with the security challenges it poses, Valenzuela said at a recent discussion with college students in Washington.

So far, Washington has responded with some assistance to Peru, primarily through development and anti-deforestation programs. Peruvian officials, though, have voiced frustration with what they contend is poor coordination among U.S. agencies, U.S. disregard for the importance of global cooperation and an agenda that fails to address the urgent need in Peru.

In a recent interview in Lima, one senior Peruvian official working on climate change issues said the U.S. has made it clear that climate change is not a priority in its negotiations with Peru.

It’s certainly a priority for Peru, which is the third most vulnerable country in the world to climate change risks, according to the U.K. Tyndall Centre on Climate Change, and will suffer the most immediate impacts of glacier melt. It also is struggling with rampant poverty, ethnic tensions, insurgency and continuing border disputes with Chile and Ecuador.

When added to existing security challenges, climate change could push the country into a national crisis, which is why some members of the U.S. intelligence community are worried.

“South America is of strategic importance, that’s pretty straightforward.” said one senior U.S. intelligence official. Climate change-induced water shortages in a country like Peru, which has limited coping mechanisms potentially are “destabilizing. And if that state is an important state to the United States, then it is a national security issue,” the official said.

‘There won’t be any more water’

Its ice is melting, but the majesty of Huascarán Mountain hasn’t diminished. Peru’s tallest mountain, its white peak still pierces the clouds on an overcast day in the Cordillera Blanca, part of the Andes range that stretches through Peru’s northwest department of Ancash.

Communities in the Cordillera Blanca still revere Huascarán for its beauty and the water it provides that allows them to survive in Peru’s extreme terrain, far from Lima and often beyond the reach of government services.

But over the last 20 years, they’ve watched Huascarán’s glacier start to disappear, the ice giving way to more black rock year after year.

“It used to take you two or three hours walking to reach the ice. But now you have to walk five, six hours to reach ice,” said Maximo Juan Malpaso Carranza, a farmer in Utupampa, a small community high in the Cordillera Blanca, as he installed a water pipe beneath the village’s dirt road to bring water from Huascarán to 105 houses.

“We all get water from there. That’s where the water source is,” he said, pointing to Huascarán. “But if the ice disappears, there won’t be any more water.”

Peru has lost 22 percent of its glaciers over the last 35 years, according to the Peruvian Ministry of Environment. Research by César Portocarrero, the Peruvian government’s lead glacier scientist, shows the Cordillera Blanca, which is home to one-quarter of the world’s tropical glaciers, has lost 30 percent of its glaciers since 1970. Parts of the Central Andes, the mountain range that supplies many of Peru’s coastal cities with water, have lost more 60 percent of their glaciers in the last 40 years.

“We know some glaciers could disappear in 20 years. We know this,” Portocarrero said.

The impact of glacier melt extends beyond the Andes. More than 2 million people, stretching from the Andes to the coastal cities, get their drinking water and irrigation from rivers fed by glacier runoff from Cordillera Blanca, according to Portocarrero’s studies. The secondary impacts of glacier melt will affect many more.

Life on Peru’s coast depends on water from the Andes. Most of its agriculture production is on the arid coast, fed by water from the Andes. Glacier-fed rivers also support the nation’s largest hydroelectric plants, which provide 60 percent of the country’s electricity.

Lima, the world’s second largest desert city, is almost totally dependent on Andean rivers fed by glacier melt. Water shortages are widespread there, and even worse in communities nearby that can’t compete with the capital for meager water supplies. Officials in Callao, a small port city next to Lima where 20 percent of the population is without water, fear further contamination of the dwindling supply will lead to outbreaks of dengue and cholera that could easily spread.

Rising conflicts, dwindling resources

Water conflicts have been frequent in southern Peru over the last few years, and many have turned fatal. Glacier melt will create more conflict over water resources that could affect the entire country, or, in extreme cases, conflicts with neighboring countries like Bolivia and Ecuador, countries with their own water problems, retired Maj. Gen. Luis Palomino Rodriguez, head of Peru’s National Civil Defense Institute, said in an interview.

Those water skirmishes have become a concern of U.S. officials. The [2007 Center for Naval Analyses report (pdf)](http://global-warning.org/main/documents/national-security-and-the-threat-of-climate-change/), a pivotal document that spearheaded high-level discussions about the security threat of climate change, says that Peru will “face a precarious situation” as the “loss of glaciers will strain water supply,” threatening the region stability. The [National Intelligence Council warns (pdf)](http://global-warning.org/main/documents/global-trends-2025/) about social conflict over water as resources dwindle and demand for hydropower and crop irrigation rises.

The threat in the Andes has the Pentagon’s Southern Command more engaged in climate issues in the region, and Peru has emerged as a key partner. SouthCom and the State Department hosted a Climate Change and Regional Security Conference in Lima last June and plan to host a similar event next year for militaries from around the Western Hemisphere, said Myrna Lopez, an environmental security expert with SouthCom.

SouthCom started looking at the security impacts of climate change in 2008, but did not formalize its work on the issue until this year, when the [2010 Defense Department’s Quadrennial Defense Review (pdf)](http://global-warning.org/main/documents/quadrennial-defense-review-2010/) recognized climate change as a national security issue for the first time, according to Lopez.

SouthCom will release a new environmental security strategy in the coming months, but the military is far from integrating its climate change studies into operations.

“We have a lot to do,” Lopez said. “We’re not there yet where we have a complete buy-in from the DoD that this is a core military role.”

But, given its history, SouthCom probably won’t have a choice but to start planning for climate change. One of SouthCom’s primary missions is humanitarian aid and it has a history of being called on for disaster response in Latin America, according to the Air Force’s Briggs. “It will be the U.S. military that will respond to a climate change disaster.”

**The Andes precedent risks US military intervention of water disputes around the world**
**Healey 10** - Senior fellow @Harvard University's Kennedy School of Government [Thomas Healey, “The Global Water Crisis Is Too Big to Ignore,” The Georgetown Public Policy Review, 16 Geo. Public Pol'y Rev. 63, 2010 - 2011

THE POTENTIAL FOR CONFLICTS
Dwindling or disappearing reserves of freshwater have far-reaching consequences. The lack of abundant, safe, and accessible water is creating a combustible brew of deepening conflicts and potential wars both between and within nations.
Around the world, more than 215 major rivers and 300 groundwater basins and aquifers are shared by two or more countries (Barlow 2007). Examples abound of potential sources of water conflict: Israel, Jordan, and Palestine all rely on the Jordan River, which is controlled by Israel; Turkey's plans to build dams on the Euphrates River brought it to the brink of war with Syria in 1998; the Brahmaputra River has been a constant source of friction between China and India;  [\*68]  and flooding along the Ganges river caused by melting glaciers in the Himalayas is precipitating the illegal and contentious migration of displaced citizens of Bangladesh to India. Trouble has even occurred on the U.S.-Mexico border where a private group of U.S.-based water rights holders has used the North American Free Trade Agreement to challenge the long-term practice of Mexican farmers to divert water from the Rio Grande before it reaches the U.S.
 In an interview with the BBC, former UN Secretary-General Boutros Ghali predicted that water could soon become as valuable as oil, touching off conflicts in parts of the world where the resource is most endangered, including Egypt, Ethiopia, Kenya, Uganda, Tanzania, Burundi, Rwanda, the Congo, and Sudan (Thomson2005). Officials in the U.S. are well aware of the implications for American global security and foreign policy. Dr. Allan Hoffman (2009), a senior analyst for the U.S. Department Of Energy, has warned that U.S. energy interests in the Middle East could become threatened by water conflicts in the region. The danger of potential U.S. involvement in water wars around the world was also sounded by a group of top retired U.S. military admirals and generals in a report published by the CNA Corporation (Sullivan et al. 2007), a nonprofit company which conducts in-depth analyses for government leaders.

#### Each intervention risks uncontrolled nuclear escalation

**Hellman 12** – Professor Emeritus of Electrical Engineering @ Stanford University [Dr. [Martin Hellman](http://www-ee.stanford.edu/~hellman/), [War Games and Nuclear Risk](http://nuclearrisk.wordpress.com/2012/11/25/war-games-and-nuclear-risk/),” Defusing the Nuclear Threat, [November 25, 2012](http://nuclearrisk.wordpress.com/2012/11/25/war-games-and-nuclear-risk/), pg. http://nuclearrisk.wordpress.com/2012/11/25/war-games-and-nuclear-risk/

A 2008 RAND [Project Air Force report](http://www.rand.org/content/dam/rand/pubs/monographs/2008/RAND_MG614.pdf) states:

In 2004, Director of Air Force Strategic Planning Major General Ronald J. Bath sponsored a war game in which uncontrolled escalation occurred, surprising players and controllers alike … this experience was just one in a series of escalatory events occurring in major war games over the past several years.

A [2012 report](http://www.ifri.org/downloads/pp40morgan.pdf) by the lead author of the above report, RAND’s Dr. Forrest E. Morgan, added a few more details:

By 2004, strategic planners at Headquarters U.S. Air Force had become concerned that they did not adequately understand escalation risks in the contemporary security environment. … An increasing number of war games … had ended in uncontrolled escalation, games in which the scenarios called for only limited U.S. military intervention against notional adversaries that were clearly outmatched by U.S. forces. … At first game analysts assumed the outcomes were spurious, the result of overly aggressive “red teams” … But the increasing frequency with which the games turned escalatory and the wide range of participants and scenarios suggested that something else was at work, something that Air Force planners did not understand.

While classification prevented more details from being disseminated, Yale Professor Paul Bracken’s excellent, [just-released book](http://www.amazon.com/The-Second-Nuclear-Age-Strategy/dp/080509430X/ref%3Dtmm_hrd_title_0?ie=UTF8&qid=1353829045&sr=8-1), The Second Nuclear Age, reveals significant details of a June 1983 war game, codenamed Proud Prophet (pp. 81-89).\* This war game differed from earlier exercises in that Secretary of Defense Caspar Weinberger and JCS Chairman. General John W. Vessey Jr. played themselves and our actual war-fighting plans were used. According to Bracken:

The result was a catastrophe that made all the wars of the past five hundred years pale in comparison. A half billion human beings were killed in the initial exchanges and at least that many more would have died from radiation and starvation. NATO was gone. So was a good part of Europe, the United States, and the Soviet Union. Major parts of the northern hemisphere would be uninhabitable for decades. (page 88) …

This game went nuclear big time, not because Secretary Weinberger and the chairman of the Joint Chiefs were crazy but because they faithfully implemented the prevailing U.S. strategy. (page 88) …  after Proud Prophet, there was no more over-the-top nuclear rhetoric coming out of the United States. Launch on warning, horizontal escalation, early use of nuclear weapons, tit-for-tat nuclear exchanges – these were banished, conceptually and rhetorically. The Reagan administration switched gears. The chairman of the Joint Chiefs spent the next several years cleaning up U.S. war plans. Nuclear threats were gone. (page 89)

But is the nuclear threat gone today? The 2004 war games, described above, seem to indicate that threat is alive and well, as do recent implied US nuclear threats against both Russia and China – see my blog posts of [November 10](http://nuclearrisk.wordpress.com/2012/11/10/us-creates-nuclear-trip-wire-in-poland/), [September 28](http://nuclearrisk.wordpress.com/2012/09/28/another-early-warning-sign/), and [September 26](http://nuclearrisk.wordpress.com/2012/09/26/poking-the-russian-bear-and-baiting-the-chinese-dragon/) for details. And, as Prof. Bracken’s book ably demonstrates, nuclear proliferation and terrorism have added dangerous new dimensions.

# Conention 2

#### We solve – Our judicial precedent paves the way for a treaty that funds global adaptation programs

**Abate 10** - Professor of Law @ Florida A & M University [Randall S. Abate, “[Public Nuisance Suits for the Climate Justice Movement: The Right Thing and the Right Time](http://heinonlinebackup.com/hol-cgi-bin/get_pdf.cgi?handle=hein.journals/washlr85&section=16), Washington Law Review, Vol. 85 Iss. 197

B. Incorporating Climate Justice Principles into the Post-Kyoto Regime

As Kivalina-like litigation theories gain support in the courts in the United States, Australia and elsewhere, they may prompt nations to develop legislation recognizing such human rights-based protections for climate change impacts. The next step would be to integrate such a theory at the international level in a treaty or pre-treaty agreement, such as the recent Copenhagen Accord.369 A similar progression occurred in the context of environmental impact assessment, which took hold in the United States in the late 1960s370 and was subsequently integrated into international environmental law treaties in the ensuing decades.371 Developing countries’ interests are now commanding more attention than ever before in international climate change negotiations.372 The need for climate justice provisions as part of a post-Kyoto regime is likely to gain a similar stronghold with possible victories at the domestic level in cases like Kivalina and the Torres Strait Islanders. One goal of the climate justice movement is that the cultural genocide these victimized populations are facing or may face in the immediate future should begin to trigger domestic and international human rights protections.373

Some of the publicity regarding the need for climate justice provisions has already taken hold in international climate diplomacy. In December 2009, at the Fifteenth Conference of the Parties to the Kyoto Protocol in Copenhagen, climate justice concerns were considered as part of the negotiation for the provisions of the Copenhagen Accord. For example, Article 1 of the Accord provides, “We recognize the critical impacts of climate change and the potential impacts of response measures on countries particularly vulnerable to its adverse effects and stress the need to establish a comprehensive adaptation programme including international support.”374 The Accord also establishes specific mechanisms to promote climate change adaptation assistance to vulnerable populations. For example, Article 6 recognizes the crucial role of reducing emissions from deforestation and forest degradation (REDD) to “enable the mobilization of financial resources from developed countries” to reduce global greenhouse gas emissions.375 In addition, Article 8 calls for thirty billion dollars for the period 2010– 2012 in adaptation funding from the developed countries to the “most vulnerable developing countries, such as the least developed countries, small island developing States and Africa.”376 Article 8 further calls for 100 billion dollars a year by 2020 to address developing countries’ efforts to mitigate greenhouse gas emissions.377

But Copenhagen was a disappointment to many who sought stronger protections for vulnerable populations.378 First, the Accord is only a political agreement—the hope to negotiate a binding treaty text at Copenhagen was abandoned as impossible prior to the start of the meeting.379 The international community now seeks to negotiate such a binding text at the Sixteenth Conference of the Parties (COP 16) in Mexico City in 2010. Second, the negotiations were highly contentious, largely because the developing countries were dissatisfied with the mitigation and adaptation proposals that the developed countries were offering.380 Finally, the Accord’s final language lacked any reference to “human rights” and existing human rights obligations set forth in other international treaties and instruments.381 For a post-Kyoto treaty to fully respond to the climate-change-adaptation era of the present, a marriage of international environmental law and international human rights must occur in that treaty’s text.382 Anything less would further victimize vulnerable populations who lie in the path of devastating climate change impacts.

Despite its shortcomings, the Copenhagen Accord reflects an important paradigm shift in the international community’s approach to climate change as compared to the existing approach in the Kyoto Protocol. While climate change mitigation strategies remain important, they are no longer the exclusive focus of international climate change regulation. The text of the Copenhagen Accord is laced with urgency regarding the need to implement meaningful climate change adaptation measures for vulnerable populations.383

But the Copenhagen Accord is only a small step forward. The climate justice field, both domestically and internationally, needs to build on the progress from Copenhagen and develop action mechanisms and affirmative rights for these vulnerable populations to ensure that their interests are given top priority as the international community confronts the daunting challenges posed by climate change in the decades to come. Formally recognizing the need for action is an indispensable first step. But the devil is in the details and the needs of vulnerable populations must come first in moving forward. Human rights impact assessments384 and actionable individual rights as part of a post-Kyoto regime on climate change are examples of a new, human-centered strategy to combat international environmental problems. Treaty-based protections addressing climate change can no longer focus exclusively on state sovereignty and protection of natural resources. The focus now must shift to ensure protection of vulnerable populations affected by climate change.

Perhaps the most shocking illustration of this need for enhanced protections for vulnerable populations is in the Maldives, a country that faces certain inundation from sea level rise within decades unless drastic mitigation and adaptation measures are undertaken very soon. This crisis is compellingly conveyed through the eloquent words of the President of the Maldives, Mohamed Nasheed, in his inaugural address to the “Climate Vulnerable Forum” meeting on November 9, 2009.385

We gather in this hall today, as some of the most climate vulnerable nations on Earth. We are vulnerable because climate change threatens to hit us first; and hit us hardest. And we are vulnerable because we have modest means with which to protect ourselves from the coming disaster. We are a diverse group of countries. But we share one common enemy. For us, climate change is no distant or abstract threat; but a clear and present danger to our survival. \*\*\* We are the frontline states in the climate change battle. \*\*\* So what can we do about it? \*\*\* Members of the G8 rich countries have pledged to halt temperature rises to two degrees Celsius. Yet they have refused to commit to the carbon targets, which would deliver even this modest goal. \*\*\* At two degrees my country would not survive. As a president I cannot accept this. \*\*\* I refuse to believe that it is too late. . . Copenhagen is our date with destiny.386

If the Copenhagen Accord represents the outcome of these nations’ “date with destiny,” there is little hope for these nations’ survival in the coming decades. These “frontline” nations must press for more comprehensive and aggressive mechanisms to authorize climate justice relief in both domestic and internationals law instruments and forums.

CONCLUSION

Regardless of the ultimate outcomes in the public nuisance cases for climate change impacts in U.S. federal courts, this litigation strategy has been an enormous step forward in the climate justice movement. It has drawn attention to vulnerable populations that have been victimized by climate change impacts and it has underscored the urgent need for a viable remedy. These cases were well-timed in that each drew attention to these issues at a critical juncture in the international diplomacy on climate change law and policy in the negotiations leading up to Copenhagen. Developing nations’ need for mitigation and adaptation measures have taken center stage in the post-Kyoto era, and negotiating a viable system of compensation for victims of climate change impacts will be an indispensable component of these negotiations in the years ahead. Of course, the nature and degree of these remedies will continue to be tested in domestic courts and in international negotiation sessions. Ken Alex, Supervising Deputy Attorney General for the State of California and counsel for the plaintiffs in California v. General Motors Corp., has faith in the promise of public nuisance and other common law remedies to effect change and promote justice for victims of environmental problems. He writes:

But in many ways, this environmental challenge is no different from the clouds of ‘sulphurous acid gas’ streaming from the stacks of Tennessee copper companies into Georgia a century ago, where the federal common law rose to protect the interests of the harmed state. The genius of environmental common law is its ability to address new pollution problems using long established principles validated by decades of judicial precedent to effect sometimes profound changes. The challenge for attorneys handling today’s innovative cases is how to best use those common law tools to reach beyond the constraints of current politics to a new era of responsibility and hope.387

The Kivalina case, and a narrow class of future cases like it, could be the bridge toward an era of increased hope for the victims of climate change impacts and a transition toward increased responsibility for the public and private entities that are principally responsible for those harms. Pg. 247-252

#### Our decision shifts public perceptions

**Kilinski 09** – JD from Florida State University College of Law [Jennifer Kilinski, International Climate Change Liability: A Myth or a Reality?, 18 J. Transnat’l L. & Pol’y 377, Spring 2009

However, if any case can contain the necessary elements to succeed in the near future, Kivalina, as a whole, appears to have them all. It has a viable plaintiff. The complaint names highly vulnerable defendants with allegations of civil conspiracy. The legal theory of public nuisance is one that is well developed in federal common law and has yet to be pre-empted. It also presents an opportunity for incremental change in damage awards, asking for the realistic cost of relocation, as measured by two independent government agencies. Many scholars argue that attempting to redress a diffuse number of harms presents a number of important obstacles, including a tougher time with proof and causation, and overriding policy concerns of undermining the opportunity for adaptation and mitigation (as compensation for victims could leave industry pockets empty). This would barely scrape the surface of the capability of these profit-rich industries to internalize the costs of damages caused by their past, present, and future greenhouse gas emissions.

V. CONCLUSION

The bottom line is that it is better to start with incremental steps in any attempt to succeed in a suit for climate change liability. A case with a small numbers of plaintiffs, requesting relatively modest damages is preferable at this stage, as compared to one that aims for a currently unattainable goal. Unfortunately, the impacts of climate change will long be with us and as such, an expansive, international system seems inevitable. It will take the world, acting in concert, to succeed in meeting the emissions reductions necessary to reverse the warming trends. The priority now should be to compensate those discrete sets of victims who are losing their culture, their land, and themselves to climate change, spurring the public and private sectors to make meaningful changes and setting a better path for the generations of people to come.

Furthermore, the Kivalina case presents an opportunity for further dialogue on the need for legislative and executive action. As Martin Luther King Jr. said, “we are faced now with the fact that tomorrow is today.” When courts and other highly credible institutions validate the urgency of reducing emissions, the general public’s perception of the climate change debate shifts from whether climate change is real, to what remedies are immediately available for implementation. For the public, court decisions can move the debate from an esoteric one among scientists to an issue decided by impartial judges whose job it is to resolve such matters. The only question is, will this movement come from the judiciary by finding liability for climate change? Or will the filing of cases alone move world governments to action, precluding the immediate need for large damage awards? Either way, this planet will long be dealing with how to apportion responsibility for emissions and corresponding damages incurred by victims of climate change. Pg. 415-417

#### Nuisance damages will encourage generators to voluntarily pay for global adaption efforts

**Cutting & Cahoon 08** - Professor of Environmental Studies @ UNC Wilmington & Professor of Biology and Marine Biology @ UNC Wilmington [Robert H. Cutting & Lawrence B. Cahoon, “"The 'Gift' that Keeps on Giving: Global Warming Meets the Common Law," Vermont Journal of Environmental Law, 10 VJEL 109, 2008, Volume 10

B. Litigation

Much of the litigation of the past few years focused on federal resistance both to the EPA’s regulation and to states’ efforts to regulate fuel composition, mileage, and GHG emissions. Results have been less than favorable to the states, and even Mass. v. EPA is back in court because of the refusal of the Bush Administration to act.121 Now, attorneys general and NGOs have launched a major offensive in federal court. Using both federal and state public nuisance theories, they are trying to obtain extensive relief, seeking to force electrical power generators and automakers to reduce GHG emissions or bear the costs global warming imposes on our society and ecosystems.122

These cases serve an important public information function. This, in turn puts pressure on a recalcitrant administration and legislature to enact more comprehensive but politically palatable solutions, such as cap-andtrade. Since consumer behavior, particularly energy use, can radically influence GHG volume, consumer awareness may spark consumer behavior modifications; though information for consumers and investors remains difficult to obtain.123 These cases also offer a chance for the responsibility of global warming related damages to shift from receptors onto generators through efficient, effective, and creative equitable relief.124 In addition, the generators’ tremendous exposure to liability in these public nuisance cases may be just enough incentive to spur generators to develop their own creative solutions to the problems associated with GHG emissions.

#### The inability to immediately halt warming makes adaptation the only solution

**Marlow & Barcelos 11** - Co-Executive Directors of the Three Degrees Project at the University of Washington School of Law [Jennifer Marlow (JD from the University of Washington) & Jennifer Krencicki Barcelos (JD from the University of Washington), “Global Warring and the Permanent Dry: How heat threatens human security in a warmer world,” Seattle Journal of Environmental Law, 2011 Volume 1 Issue 19

The 2007 IPCC report defines adaptation as “[t]he adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.” 74 In other words, adaptation is about “managing the unavoidable.” 75 Often overshadowed by mitigation efforts to slow greenhouse gas emissions, adaptation gets weaker political support, fewer sound bites, and less attention from scholars and policymakers. To some, adaptation unpopularly suggests concession to a warmer world. Another reason adaptation is unpopular is because it requires unprecedented levels of cooperation and engagement. Unlike mitigation policy, the proposals for which are largely market-driven, adaptation policy necessitates a big role for governments. This is because without improved political and legal institutions to reduce poverty and inequity, environmental challenges such as climate change will continue to be a prominent factor in undermining economic and political stability. Governments, international cooperation, and the domestic rule of law must play a key role in ensuring future security and stability as we adapt to life in a warmer world.

 The world needs real, not rhetorical, adaptation policies. Even if every person on the planet stopped emitting the greenhouse gases from fossil fuels today, elevated levels of carbon dioxide will linger in the atmosphere for thousands of years.76 NOAA scientists have concluded that climate change is “largely irreversible for 1000 years”77 and predicts dire impacts for the overall climate system as a result, such as a one thousand year Dust Bowl in the American Southwest, which is predicted to be irreversibly dry desert by 2050.78 In a Nature article last year titled “Overshoot, adapt, and recover,” IPCC scientists concede that because we will likely overshoot carbon emissions targets, adaptation policy deserves even more robust attention.79 John Holdren, President Obama’s science advisor, explained that “[w]e basically have three choices: mitigation, adaptation[,] and suffering. We’re going to do some of each. The question is what the mix is going to be. The more mitigation we do, the less adaptation will be required and the less suffering there will be.”80

Unequivocally, the world is getting warmer. Significant suffering could be alleviated by spending money on adaptation that provides better access to basic human services. Funding for public health, water deliverymethods, and food storage facilities will reduce the degree to which people suffer while the United States and other countries ideally formulate a robust set of adaptation policies. However, given that 1) we have collectively evaded mitigation—the cheaper option of climate change prevention,81 2) neglected adaptation, and 3) chosen suffering by default, disaster relief and humanitarian aid are likely fallbacks. Yet humanitarianaid and voluntary charitable giving campaigns are an inadequate substitute for a comprehensive adaptation response.

Humanitarian response cannot stand in for climate adaptation policy because climate changes are becoming irreversible.82 In a warmer world, drought endures; and in a state of permanent dry, drought will come again. Former United Nations Under-Secretary-General for Humanitarian Affairs Jan Egeland critiques humanitarian efforts for saving people’s lives today so that they can die tomorrow.83 Talking about Darfur at a 2008 Carnegie Council event, Egeland said:

Number one, it’s not enough with blankets and it’s not enough to keep people alive if there is no security and, now, durable political solutions. The story of Darfur, as I see it, is that we treated it as if it was a natural disaster, whereas it was manmade, from A to Z, as a war. It is exacerbated by climate change, but it was manmade, as a disaster.84 Pg. 35-39

#### Climate security discourse shifts the paradigm of security from competition to cooperation.

Hugh DYER School of Politics and Interational Studies @ Leeds ‘8 “The Political Significance of 'Energy Security' and 'Climate Security'” Paper presented at British International Studies Association 33rd Annual Conference <http://www.bisa.ac.uk/2008/pps/Dyer.pdf>.

Assumptions of structure Here we want to map a shift in the political point of reference for essential assumptions about the structure of the international system. Both ‘energy security’ and ‘climate security’ play to an existing set of assumptions about international relations being defined essentially in terms of a condition of security (or, more to the point, insecurity), and consequent political relationships and political issues defined in terms of security, which rest on a very limited and short-term conception of what and who is to be secured. The dominance of this underlying assumption about the essence of world politics colours everything else – all kinds of relationships and issues, whether or not they seem to bear directly on ‘security’ or be consequent upon it. It should be noted that a trend towards ‘securitization’ of issues normally thought about, spoken of, and acted upon in different terms brings with it both dangers and opportunities (see the critiques by Buzan, Wæver, Williams, and others). The double-edged sword of securitizing energy and climate issues is forged from the element of urgency or emergency invoked by the ‘security’ category, which could justify either unwelcome extraordinary action or complete inaction by states even as it provides (potentially) welcome political focus, resources, and timely implementation. While the former are unlikely to meet tests of moral rectitude (except of the very limited state-centric protectionist and status-quo preservationist kind), the latter would represent a refreshing sense of the importance of living up to broader political obligations of the sort that energy and climate crises invoke. The complexity and novelty of this combination of policy challenges requires innovative interdisciplinary theoretical tools drawing on work in security studies and eco-political thought to develop a more holistic 'eco-logical security' perspective (see, e.g., Pirages and Cousins, 2005) on the global agenda for achieving climate security and energy security in a coordinated manner. The notion and concept of ‘ecological security’ is in wide circulation (even some government departments use this title; e.g. in the Ukraine), but its meaning is also thus diffuse. This is either a problem in terms of establishing a shared political vision and agenda, or an opportunity for cooperation through creativity and inventiveness. For example, innovations on 'securitisation' – e.g. for better or worse in respect of development assistance, and now climate change – and notions of 'ecological debt' might even suggest financial securitisation of internalised climate costs; something attractive to modern financial markets, no doubt. There can be little doubt now (after Stern, 2006) about the cost implications of climate change, and the likely impact on economic growth, but this could simply lead us to think about the economic opportunities this presents. Any notion of economic change that doesn’t involve growth seems anathema under current economic assumptions, but those assumptions are likely to change dramatically under the twin pressures of energy and climate crises. Change itself is not problematic, and even economic growth has always drawn on the opportunities change brings in terms of new technologies, new social practices, and new markets. So the prospect of economic change should not be too troubling (and for those disadvantaged by the current global economy, an equitable change would be welcome). If change is alright, growth probably isn’t, or at least not in its current guise – so this will require a change of perspective on ‘growth’ such that it does not signify ‘more of the same’, in terms of ever increasing consumption of the earth’s resources and reductions in natural capacities. Growth in human opportunities and diversity of practices would be welcome and economically beneficial, if these do not require fossil fuels and carbon sinks. It is no longer bizarre to speak of a ‘low-carbon economy’, or even a ‘post-petroleum economy’, and neither involves the cessation of economic activity; they simply involve change. Equally, it is not novel to speak of ‘economic security’ as a high priority (though for whom is not always so obvious), but whatever that entails now it certainly won’t be the same in the future. Since the various kinds of security we seek, including that related to energy and climate, are so clearly tied up with the cessation of unsustainable practices in both economics and politics it requires no leap of the imagination to grasp that some form of sustainability is needed – it only remains to establish the strategic goals and mechanisms to deliver on these obvious requirements. ‘Energy security’ and ‘climate security’ have thus entered the discourse as strategic goals, while the corresponding mechanisms are as yet at best ill- formed, and perhaps incoherent, which rather suggests that the element of sustainability has not yet been taken seriously. Rather than ‘securitization’, the practical dilemmas in the climate and energy context suggest that ‘security’ indicates commitment, reflecting an underlying shift in priorities. To the extent that this reflects appreciation of unsustainable inequity, and a shift toward ecological values, it is a politically significant turn. To the extent that it implicates ‘green’ economic practices and political action, it is a shift in structural assumptions. There is already considerable concern and cooperative activity, but it must also cope with predominately structural obstacles. Beyond the practical problem of coping with existing structures, or changing them, is the deeper problem of assuming foundational points of reference for any given structural reality such that challenging or changing it is difficult or impossible. So there is an intellectual, or attitudinal, hurdle to leap at the outset – we’d have to accept that some deeply held assumptions are simply not viable (sustainable), and learn to let them go. I have suggested elsewhere that while ‘perspectives on politics in the absence of immutable external foundations may be quite widely accepted… there is a great temptation in public discourses to deal with uncertainty by positing certainties, and to play fundamentalist trump cards of different kinds’ (Dyer, 2008). Switching from one foundational reference to another is not likely to work, and the anti-foundational perspective taken here suggests a pragmatic approach to developing the most effective social practices as we learn them, and adjusting structures to support them. An institutional context illustrates the discourse, in so far as ‘some controversial principles, such as whether to approach from an anthropocentric perspective or from a biocentric approach, or whether the viewpoint was from the individual or community, were the focus of considerable debate’. Not surprisingly, there is an air of realism about the application of ethical principles on renewable energy: ‘although a normative declaration would be nice, it was not feasible in the current political environment’ (UNESCO 2007; 7). The pragmatism is, nevertheless, appropriate since there is no progress to be made by assuming that an appreciation of the political significance of energy and climate security only bears on abstractions – the point is that the underlying values reflected in political agendas should be flushed out, and the most appropriate values promoted and acted upon in a pragmatic fashion as interests. For example, it was noted that ‘barriers to renewable energy systems were institutional, political, technical and financial’ and also that there is ‘potential conflict between bioregional, potentially unstable energy systems and countries’ desires for energy independence and self-reliance’; this suggests the need for a ‘global eco-ethics’ (UNESCO 2007; 8). Pragmatism is inherent in thinking through the political significance of such challenges: ‘From the ethical point of view, nuclear power presented many problems at each point of the complex supply chain, including uranium mining, enrichment, and risk management in a functioning plant. It was a highly centralized and state-controlled source of energy that did not promote participatory democracy’. It can also be seen that ‘nuclear and fossil-fuel based power also triggered international conflicts’. By contrast, ‘renewable energies such as solar, wind, small hydro, biomass, geothermal and tidal energy are often decentralized and can be used in remote areas without a solid energy supply system’ (UNESCO 2007; 8-9). The political significance of energy security and climate security dilemmas is that they cause us to see change as a challenge, rather than impossible; a challenge to be met by reconsidering our value-orientations – which changes everything. Elsewhere I’ve noted that goals which the state purports to serve (health, wealth, security) are seen differently in an environmental light, and this could lead to substantial change in political practices (Dyer, 2007). Another pragmatist, John Dewey, ‘argued that the public interest was to be continuously constructed through the process of free, cooperative inquiry into the shared good of the democratic community’ and Minteer suggests that this is a necessary approach ‘in making connections between normative arguments and environmental policy discourse’ (Minteer, 2005). This reflects Hayward’s argument that environmental values are supported by enlightened human interests, and furthermore this link must exist to promote ecological goods, and that consequently there are serious implications in fully integrating environmental issues into our disciplinary concerns (Hayward, 1998). I’ve argued before that environmental politics dislodges conventional understandings of agency, and in ‘this wider socio-political-economic context, ecological significance may be the determining factor in the end’ (Dyer, 2007). Hargrove (1989) makes an argument for anthropocentric, aesthetic sources of modern environmental concern by identifying attitudes that constrained (‘idealism’, ‘property rights’) and supported (scientific and aesthetic ideals) our environmental perspectives. If this argument doesn’t stretch us much beyond ourselves, there is no reason these anthropocentric orientations couldn’t be built upon as a foundation for more specifically ecocentric perspectives. The key here is to identify the underlying ‘security’ assumptions which thwart efforts to cope with energy and climate issues coherently and effectively, and to advocate those assumptions that serve genuine long-term human security interests (inevitably, in an ecological context). In this way can we take stock of the existing structures that constrain and diminish human agency – while conceiving of those that would liberate and secure it in sustainable ways. As the reality of the situation slowly dawns on us, various political, moral, economic and social actors are beginning to consider and test new strategies for coping – the real question is whether they are just playing to beat the clock, or if they’ve stopped long enough to reconsider the rules and purposes of the strategic context in which they act.

#### Greening climate geopolitics is better than trying to abandon security.

Simon DALBY Geography @ Carleton ‘3 in *A Companion to Political Geography* ed. John Agnew p. 450-451

In much of the contemporary literature on environment and security as well as on development and sustainability, there is a growing recognition of the importance of matters of practical security as the condition for sustainable development, and likewise the need for various forms of development to enhance security in many ways (Suliman, 19fl). But how these interconnections are to be thought through, and in what geopolitical framework any of this can be made meaningful, remain the big political issues for attempts to think intelligently about how to "green" any understanding of geopolitics.

Most obviously the question of geographic scale looms over these considerations. Can a town in England be considered sustainable if it is dependent on oil supplies from Nigeria and fresh vegetables grown in Kenya and flown in daily to Heathrow? Could it be considered so if it included in its boundaries woodland containing enough trees to remove an equivalent quantity of carbon dioxide from the atmosphere to that added by its population by driving cars and hearing their homes? Should the fuel, from Nigerian oil wells possibly, that is used to fly the vegetables from Kenya be counted in too? What if the town was to buy some land in Kenya or Nigeria to grow trees there to absorb the carbon dioxide instead, because it's cheaper to buy land and pay Southern wage levels to workers there to look after the trees? But what then of the local people who may need the trees for firewood or shelter, or who may be trying to use the land to grow crops for export to improve their economic condition?

These are the kinds of questions that have to be asked if the simplistic geopolitical assumptions of states as the containers of political communities that decide these maners are to be removed and more complicated ecological arrangements considered. They are precisely the questions already being asked by numerous campaigners for Southern debt relief, human rights, and ecological reform in the North. They are being asked by ecologists trying to find innovative strategies for Northern communities concerned to reduce the environmental impact in the North without precluding economic opportunities for the poor in the South SacM et al 1998). However, apart from questions of "emissions trading" and "carbon sinks" an greenhouse gas negotiations, they frequently are not the kinds of questions being asked (yet?) by politicians and corporate executives as they survey the global scene in search of political dangers or business opportunities. Scholars preoccupied with security still frequently locus on states and their stability. Development and the possibilities for peaceful cooperation are understood in terms of the operation of formal commodity markets and the frequently ethnocentric assumptions of Western-style democratic institutions as the only option. But as scholars familiar with anthropology art increasingly panting out, this preoccu- pation with states and security also obscures the more general patterns of the insecurity of numerous marginal peoples (Weldes et al., 1999). Environmental insecurity is not new in many of the places that detailed anthropological studies have documented. The historical struggles over access to rural land and resources in particular places offer correctives to simple Malthusian assumptions that overpopu- lation is a problem, and link up with the larger literature in political ecology that is charting the cntical connections between Nonh arid South Peet and Warts, 19961. Understanding the historical interconnections suggests rather different policy options and shows the importance of geopolitical concepts in formulating contemporary security thinking. If security is extended to consider people. not just states as has traditionally been done, then there ought to be possibilities for thinking about human security in geographic terms, but in ways that locus explicitly on these interconnections. Thus, the consequences of climate change on marginal peoples in the South are understood as partly caused by suburban driving patterns in North America. struggles or land use in Kenya are seen in conjunction with the regttabk purchasing patterns of suburbanites in London plastics are understood as both a problem of disposal and related to the expropriation of land and resources from distant rural communities.

#### The 1AC is a *challenge* message not a threat message. That increases salience, collective action, and creative problem-solving.

Robert **BRULLE** Sociology & Envt’l Science @ Drexel **’10** “From Environmental Campaigns to Advancing the Public Dialog: Environmental Communication for Civic Engagement” *Environmental Communication* 4 (1) p. 92

From Identity to Challenge Campaigns One of the most common assumptions in designing identity-based environmental communication campaigns is that fear appeals are counterproductive. As Swim et al. (2009, p. 80) note: ‘‘well meaning attempts to create urgency about climate change by appealing to fear of disasters or health risks frequently lead to the exact opposite of the desired response: denial, paralysis, apathy, or actions that can create greater risks than the one being mitigated.’’ While the author goes on to qualify and expand this line of argument, this has been taken as an absolute in the popular press and much of the grey literature produced by nonprofit organizations and foundations. However, the academic literature portrays a much more complex picture: whereas apocalyptic rhetoric has been shown to be able to evoke powerful feelings of issue salience (O’Neill & Nicholson-Cole, 2009, p. 373), reassuring messages, such as those advocated by ecoAmerica, have the least ability to increase issue salience (de Hoog, Stroebe, & de Wit, 2007; Lowe et al., 2006; Meijinders, Cees, Midden, & Wilke, 2001; Witte & Allen, 2000). Additionally, apocalyptic messages do not necessarily result in denial. A number of empirical studies show that individuals respond to threat appeals with an increased focus on collective action (Eagly & Kulesa, 1997; Langford, 2002; Leiserowitz, Kates, & Parris, 2006, p. 437; Maiteny, 2002; Shaiko, 1999; Swim et al., 2009, p. 94). Tomaka, Blascovich, Kelsey, and Leitten (1993, p. 248) distinguish between threat and challenge messaging: threat messages ‘‘are those in which the perception of danger exceeds the perception of abilities or resources to cope with the stressor. Challenge appraisals, in contrast, are those in which the perception of danger does not exceed the perception of resources or abilities to cope.’’ If a meaningful response to a threat can be taken that is within the resources of the individual, this results in a challenge, which ‘‘may galvanize creative ideas and actions in ways that transform and strengthen the resilience and creativity of individuals and communities’’ (Fritze, Blashki, Burke, & Wieseman, 2008, p. 12). While fear appeals can lead to maladaptive behaviors, fear combined with information about effective actions can also be strongly motivating (O’Neill & Nicholson-Cole, 2009, p. 376; Witte & Allen, 2000).

#### climate adaptation framing re-politicizes the distribution of the harms of climate change.

Lauren **RICKARDS** Victorian Centre for Climate Change Adaptation Research and the Melbourne School of Land and Environment, University of Melbourne **’10** “Governing the future under climate change: contested visions of climate change adaptation” VCCCAR Scenarios for Climate Adaptation Working Paper p.16

Scenarios are a means of developing and formalising alternative views of the future. Like predictions, they too create epistemic objects and materialities. They can also create alternative affective responses and attitudes to the future. They do this in part by actually demanding a different attitude to the future – by demanding an interpretation of the future as fundamentally open rather than closed. As Mulvihill and Kramkowshi (2010) argue, what is needed is a non‐essentialist outlook that accepts ‘that *plausible* futures, no matter how improbably they may seem, could actually unfold... that there is little, if anything, that is pre‐determined about the longer‐term future’ (p. 2458). Mulvihill and Kramkowshi (2010) write with the explicit goal of promoting the use of scenarios to help achieve ‘transformative change in more sustainable directions’ (p. 2458). As such, they demonstrate a growing move toward normative scenarios, which as opposed to the less directed practice of exploratory scenarios, use a ‘visionary mode of thinking’ to seek desirable futures6 (Carlsson‐Kanyama et al 2008). Normative scenarios are an approach that ‘makes explicit the – often tacit – contextual and values dimension and this leads to a questioning of ‘business as usual’’ (Gidley et al 2009: 429). By raising the issue of what is desired, providing a forum for discussion and exploration, and creating epistemic and material objects that can be used to develop shared understanding (and counter prevailing discourses), they help address and act on the question of what forms of life are valued, now and in the future. The question for climate change adaptation is whether a shift in anticipatory epistemic practice from prediction to normative scenarios is associated with a shift in thinking and action on adaptation. As mentioned above, the presumptions about the world that underpin prediction are aligned with those that underpin an understanding of adaptation as a process of “fitting to” the environment. In both, human agency is believed to be strongly limited by a fundamental ‘hyperseparation’ between humans and environment (*cf* Plumwood 1993) and the future is presented as a singular and purified object “out there” waiting to “happen to us”. Associated with a preparedness stance to adaptation that inherently accept “starting conditions” as they are, such a representation of the future and of limited human agency are frequently used to legitimate political and cultural constructs (such as neoliberal capitalism; see Gibson‐Graham 1996) as inevitable and natural. In scenario approaches, the future is refracted by uncertainty into multiple possibilities. In some readings, such as conceptualisations of climate change as closing the future and reducing human agency, this uncertainty serves as a further wedge between humans and environment. Alternatively, in other readings uncertainty serves as a platform for imagination that, at an epistemic level, automatically increases the agency of non‐experts by granting authority to imagination. In the case of normative scenarios, there is also a radically different conceptualisation of humans as co‐creators of the future and adaptation as an emergent phenomenon that can incorporate – indeed, presupposes – a pre‐emptive (that is, both anticipatory and action‐oriented) approach to the future. Critically, this brings to the fore the heavily political and cultural character of the adaptation project. Given this, it is not surprising that normative scenarios – or any scenarios – do not provide simple answers to the question ‘what type of world we want to live in and whose values count in deciding this?’ (Adger et al 2009: 8). They instead highlight that, as discussed above, belief in the human ability to shape the environment and thus future is common to groups with widely divergent ideas about what this future should look like under adaptation, and that work is needed to unpack and compare these visions. As a practice enlisted toward a highly political end, scenarios also highlight the importance and political character of process and, in particular, the question of whose values count via who participates.

#### proposing alternative economics out of nowhere is of *zero value*. Economic reform towards sustainability is key.

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Economic analysis has been one of the weakest and least developed areas of broadly green/sustainable development thinking. For example, whatever analysis there is within the green political canon is largely utopian – usually based on an argument for the complete transformation of modern society and economy as the only way to deal with ecological catastrophe, an often linked to a critique of the socioeconomic failings of capitalism that echoed a broadly radical Marxist/socialist or anarchist analysis; or underdeveloped – due, in part, to the need to outline and develop other aspects of green political theory. However, this gap within green thinking has recently been filled by a number of scholars, activists, think tanks, and environmental NGOs who have outlined various models of green political economy to underpin sustainable development political aims, principles and objectives. The aim of this article is to offer a draft of a realistic, but critical, version of green political economy to underpin the economic dimensions of radical views about sustainable development. It is written explicitly with a view to encouraging others to think through this aspect of sustainable development in a collaborative manner. Combined realism and radicalism marks this article, which starts with the point that we cannot build or seek to create a sustainable economy *ab nihlo*, but must begin from where we are, with the structures, institutions, modes of production, laws and regulations that we already have. Of course, this does not mean simply accepting these as immutable or set in stone; after all, some of the current institutions, principles and structures underpinning the dominant economic model are the very causes of unsustainable development. We do need to recognise, however, that we must work with (and ‘through’ – in the terms of the original German Green Party’s slogan of ‘marching through the institutions’) these existing structures, as well as change and reform and in some cases, abandon them as either unnecessary or positively harmful to the creation and maintenance of a sustainable economy and society. Equally, this article also recognises that an alternative economy and society must be based in the reality that most people (in the West) will not democratically vote for a completely different type of society and economy. That reality must also accept that a ‘green economy’ is one that is recognisable to most people and that indeed safeguards and guarantees not just their basic needs but also aspirations (within limits). The realistic character of the thinking behind this article accepts that consumption and materialistic lifestyles are here to stay (so long as they do not transgress any of the critical thresholds of the triple bottom line) and indeed there is little to be gained by proposing alternative economic systems, which start from a complete rejection of consumption and materialism. The appeal to realism is in part an attempt to correct the common misperception (and self-perception) of green politics and economics requiring an excessive degree of self-denial and a puritanical asceticism (Goodin, 1992, p.18; Allison, 1991, p.170–178). While rejecting the claim that green political theory calls for the complete disavowal of materialistic lifestyles, it is true that green politics does require the collective reassessment of such lifestyles, and does require a degree of shared sacrifice. It does not mean, however, that we necessarily require the complete and across-the-board rejection of materialistic lifestyles. There must be room and tolerance in a green economy for people to live ‘ungreen lives’ so long as they do not ‘harm’ others, threaten long-term ecological sustainability or create unjust levels of socioeconomic inequalities. Thus, realism in this context is in part another name for the acceptance of a broadly ‘liberal’ or ‘post-liberal’ (but certainly not anti-liberal) green perspective.1

#### Changing growth to adapt to climate change works – radical social change won’t.

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In principle, public opinion should just rely on science- hence the activity of the Intergovernmental Panel on Climate Change as a bridge between science and the public. But then again, we have read Kuhn and Fereyabend: the sociology of scientific knowledge has convinced us that society is inside the laboratory and science can only reflect social priorities and political interests. How can we just rely on science? To some, actually, climatology is not saying the truth about global warming (Leroux 2005). Yet science must still be our standpoint, for there is no better alternative, even though it is a "post-normal science" whereby "facts are uncertain, values in dispute, stakes high and decision urgent" (Funtowicz and Ravetz 1993: 742). However, a misunderstanding should be avoided. It is in this context that Sheila Jasanoff (2007) has advocated the need to produce a more humble science, one that leaves room for ethics and renounces the modem dream of a complete control over nature. That is just about right. But the reflective re-shaping of socionatural relations, up to a point where we try to regulate the oscillations of the climate with our actions, is not precisely a humble goal, nor an absurd one, especially since there is no direct relation between the current scientific consensus and the green radical vision of a de-industrialised society. Although action must be taken, it should be a proportionate one. Devising public policies and fostering private behaviour as part of a climate change policy should not be used as a pretext for advancing a closed conception of sustainability. Sustainability must encompass climate change, instead of climate change simply closing up sustainability. I would like to suggest that climate change's social dilemma resembles the one described by Blaise Pascal regarding God's existence. He famously reduced faith to a wager after considering the probabilities at stake. Pascal suggested that, although we cannot prove through reason that God exists, a person should bet on His existence, since living life accordingly one has everything to gain and nothing to lose, whereas, even more crucially, acting otherwise could mean losing everything and gaining eternal damnation (Pascal1995: 123-5). Likewise, we do know that temperatures are rising, although we do not know how will they evolve in the future, while there exists the possibility that humans are an active agent in that process and they can still influence on it. Thus two related possibilities become meaningless: that humans have nothing to do with the climate's evolution or that they cannot influence the current process anymore. They become meaningless because we must maximise our chances, that is, we must act as if advancing towards sustainability could mitigate global warming or at least facilitating the least damaging adaptation to its effects. No other wager makes sense. However, the need to act does not automatically indicate how to do so. Hence the public debate. We know that social engineering on a huge scale can fail miserably - as the twentieth century comes to show. Still, in the manner of a global insurance policy, a strategy for mitigation and adaptation is necessary. This strategy should be orientated to make possible the continuity, not the dismantling, of our current society. Neither a programme for ruralisation nor the low energy proposals aimed to scale back society into a network of self-sufficient communities are realistic (see Trainer 2010). They represent the comeback of green utopianism, although their usefulness in the debate of ideas should not be neglected: their defence of a radical transformation is necessary for achieving a moderate change. As Dyer writes: I like living in a high-energy civilisation, and I don't want to give it up. If it can be managed without causing a climate disaster, I would like everybody on the planet to live in wealthy societies that have the resources and the leisure to start looking after all citizens and not just the top dogs (Dyer 2008: 128). That is why climate change should "work for us", as Hulme and Neufeldt (2010) put it. It should be used for improving our societies through reform, not to pursue an unfeasible rupture based on a miraculous radical change in people's values (see Hourdequin 2010). It is more probable that people will follow a given virtuous inertia than to expect a sudden moral epiphany that clashes brutally with contemporary lifestyles - lifestyles that, despite the contempt that social science tends to show, people may well like. Therefore, in a nutshell, it is unlikely that citizens abandon their smartphones in order to embrace the charms of a more embedded rural life. It will simply not happen, cynical as it may sound. It also may sound Panglossian, since many today do not have enough money to acquire a telephone and the sources of dissatisfaction remain plentiful. It is in this connection that radical perspectives, namely, those wishing for some radical changes in the current sociopolitical organisation, are to be seen as the legitimate expression of unmet needs and desires deserving attention. This is true for global warming as it is true for other social problems. Yet we should not make mistakes when considering the sources of change. It is unlikely that the latter can be provoked by a sudden moral realisation on the part of relatively affluent citizens - it is more probable that a gradual evolution will take place, influenced by a multiplicity of factors, moral as well as economic and technological. On the other hand, a reformist and gradual approach to social change does not preclude the possibility that radical changes are the final outcome of an emergentist rather than a revolutionary process. Thus we should do the possible within the reasonable. But what does that mean? To begin with, it does not mean that the notion of sustainability presented so far has become invalidated. Unsurprisingly, classical environmentalists present climate change as the sudden and decisive proof that many old green positions happen to be right: nature is not abolished, human dominion of nature is not feasible, risks are everywhere. Therefore, we have been wrong and our worldview, together with our social organisation, must change. We cannot apply our old human solutions anymore: I am terrified by the hubris, the conceit, the arrogance implied by the words like "managing the planet' and 'stabilising the climate". ( ... ) Why are we, with our magnificent brains, so easily seduced by technocratic totalitarianism? (Tennekes in Hulme 2009: 312). However, we do not have any option other than trying to exert some degree of control over climate. After all, we find out what is going on with the climate because we try to exert such control (see Edwards 2010). Again, the latter should not be understood as a complete dominion, but rather as a sufficient, self-aware one. Mitigation policies are an attempt to influence climate - but I cannot see any arrogance in them. Furthermore, that we are able to discuss and devise strategies in the face of an abstract scientifically predicted threat should not be seen as a failure, but rather as a triumph of human reason. Similarly, the idea of an anthropogenic climate change does not demonstrate that nature has not ended, but rather comes to confirm in an unprecedented scale the merging of nature and society into the environment. As Leigh Glover puts it, "there is nothing natural left in the global atmosphere; humanity lives in and breathes an atmosphere that's an artifice of industrial activity and, consequently, the global climate is also now beyond nature" (Glover 2006: 254). If anything, climate change reinforces the case for a realistic sustainability. However, crucially, an advantage of climate change in this regard is that the kind of measures it demands - mitigation and adaptation in a wide scale should help to push the sustainability debate in the right direction. The reason is threefold. Firstly, climate change stresses by its very nature the issue of wellbeing and quality of life as much as that of pure survival. As the Hartwell Group (20 l 0) has underlined, climate change is not so much a problem to be solved, as a condition to live and cope with. Thus we should take advantage of the changes it demands in order to live better. That is, in healthier urban environments, in knowledge-based economies, with the best public education and health care for all (see Baker 2006: 3). Thus sustainability and well-being become linked. However, secondly, an adaptation based on the idea of well-being cannot succeed without economic growth. It is dubious that we can "manage without growth" (Victor 2008; see Jackson 2009), because tackling climate change and adapting to it is costly. Rich societies are better equipped to assimilate its impact than poor ones. As Nordhaus and Shellenberg note, environmentalism has always seen the economy as the cause rather than as the solution to ecological problems (Nordhaus and Shellenberg 2006). But, as a historic perspective shows, we can only be green while being rich. Neither the current understanding of economic growth nor the measurement of GDP for that reason should be exempt of criticism or amendment - changes can and ought to be made in order to reflect the environmental cost of economic activities. Yet the temptation to design people's well-being in a particular or detailed way should be avoided. It is rather a set of objective conditions of living under which subjective life-plans can be individually pursued that should be linked to climate change adaptation and hence to sustainability. For those conditions, which can be generally equated with the standards of current advanced societies, to be met, economic growth will remain necessary and desirable. Also because, thirdly, the idea that some sort of steady-state economy can be achieved and maintained is just a delusion. Sustainability must mirror the human condition: a dynamic type of development that by its very nature is open to further transformation (see Becker eta!. 1999: 6; Gallopin and Raskin 2002: 6). Although technological change and economic development can be orientated towards sustainability, it is wishful thinking to believe that they can just be stopped by decree. Governments must design markets and create the institutional conditions that eventually lead to a reasonable mitigation and to a successful adaptation, but they should do so without pre-determining a particular direction, although at the same time they must make sure that certain minimum targets are met (see Patt et a!. 20 10). It is all a matter of creating an institutional and economic inertia that pushes business and citizens in the direction of sustainability. To some extent, we live now in a transitional time. In fact, notwithstanding the key importance the institutional and economic drivers, it is probably the gradual cultural change induced by the current global debate on global warming that will accelerate the transition to a greener, yet liberal and open, society. In sum, the kind of approach that climate change demands coincides with the foundations of an open view of sustainability. That is why reframing environmentalism entails reframing climate change: freeing it from the rhetoric of doom and incorporating it into a narrative of social refinement. Certainly, saying that climate change should be seen as an opportunity instead of a threat sounds like a cliche. But it happens to be true - or, to be more accurate, it can be made true.