NATIONAL SECURITY IMPERATIVES IN AN ERA OF ENVIRONMENTALLY-INDUCED CONFLICTS, POPULATION DISPLACEMENTS, AND POLITICAL DISEQUILIBRIA

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The emergence and incremental intransigence of global environmental degradation and climate change discourses into social sciences have, in recent years, provided a fecund ground for debate and analyses of wide ranging geopolitical ramifications the predicted climatic variations would present for national security and human well-being. It is commonly held that climate-induced crises, in the next two to three decades, will exacerbate already fragile relations between Sub-Saharan African, the Middle Eastern, and South and Southeast Asian states, destabilize regions, topple governments and issue in mass migrations, widespread pandemics, and food scarcity. The following study aims to closely investigate the security implications resulting from global climate change and explore the geopolitical dimension of the relationship between environmental degradation and armed conflict. In attempting to better understand the impacts the destabilizing climatic patterns may have on human and national security, the appraisal of available policy and strategic responses by governments, the military, and non-governmental actors, will be given due consideration.

Introduction

The gradual emergence and incremental intransigence of environmental and global climate change discourses into social sciences in general and studies of international relations, in particular, have in recent years provided a fecund ground for debate and analyses of wide ranging geopolitical ramifications the predicted climatic variations would present for national security and human well being. The 2014 Intergovernmental Panel on Climate Change Report predicts that increased occurrence, duration, and intensity of droughts, rising sea levels, and flooding can pose significant challenges to

national stability and eventuate in global economic vulnerabilities and political instabilities as well as internal civil and political unrest and "inter-group violence by amplifying well-documented drivers of these conflicts such as poverty and economic shocks."[1] Conflict over basic natural resources, i.e. water, oil and gas, scholars predict, may strain relations between states and engage them militarily.

Internal government reviews, climate and security conferences, and domestic security reports focus increasingly on the strategic challenges posed by changing global climate. It is commonly held that climate-induced crises the next two to three decades will exacerbate already fragile relations between Sub-Saharan African, the Middle Eastern, and South and Southeast Asian states, destabilize regions, topple governments, and issue in mass migrations, widespread pandemics, and food scarcity. A proliferation of studies, chief among them being the 2007 CNA *National Security and the Threat of Climate Change* report suggest that, "the projected climate change is a threat multiplier in already fragile regions, exacerbating conditions that lead to failed states — the breeding grounds for extremism and terrorism."[2] The University of Toronto's "Project on Environment, Population and Security" predicts that environmental change will significantly stress or reduce the supply of vital natural resources, such as fresh water, cropland, forests and fisheries, leading to environmental scarcity and increased probability of armed conflict.[3] A quantitative study conducted by the State Failure Task Force assembled at the request of US policymakers to identify factors associated with serious internal crises, concluded that massive environmental damage provoked by general patterns of global climate change could directly contribute to political collapse and destabilization.[4] Similarly, studies conducted by the North Atlantic Treaty Organization and the Swiss Peace Institute assessed the potential for environmentally induced conflict to be assisted and exacerbated by proximate causes of social, political, and economic nature. In 2009, the United States Central Intelligence Agency

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1   The Intergovernmental Panel on Climate Change, "Climate Change 2014: Impacts, Adaptation, and Vulnerability (Summary for Policy makers)," http://ipcc-wg2.gov/AR5/images/uploads/IPCC_WG2AR5_SPM_Approved.pdf, (accessed 23 April 2014).

2   The CNA Corporation, "National Security and the Threat of Climate Change," https://www.cna.org/sites/default/files/news/FlipBooks/Climate percent20Change percent20web/flipviewerxpress.html, (accessed 23 April 2014).

3   The University of Toronto Project on Environment, Population and Security, "Project Description," http://www.homerdixon.com/projects/eps/descrip.htm, (accessed 23 April 2014).

4   Center for Conflict and International Crisis Management, "State Failure Task Force Report: Phase III Findings", University of Maryland, 2000, http://www.cidcm.umd.edu/publications/papers/SFTF percent20Phase percent20III percent20Report percent20Final.pdf, (accessed 23 April 2014).

(CIA) has launched the Center on Climate Change and National Security with a mandate to oversee "the national security impact of phenomena such as desertification, rising sea levels, population shifts, and heightened competition for natural resources"[5] and provide American policymakers with information and analysis on the effects climate change can have on security. In its 2010 Congress mandated *Quadrennial Defense Review*, the Pentagon planners included climate change among national security threats. Such developments should be seen in the broader context of the potential for conflagration in the Arctic region, as it undergoes significant climatic transformations. Global governance gaps in this area "threaten to fuel major diplomatic tensions among regional actors over natural resources, navigation rights and fishery management"[6] increasing competing claims to continental shelves and economic trade routes, worsening diplomatic frictions, and resulting in pronounced regional and international instabilities between major powers, the United States, Canada, Norway, Russia, China, and Japan.

In view of the above, the following study aims to closely investigate the security implications resulting from global climate change and explore the geopolitical dimension of the relationship between environmental degradation and armed conflict. In attempting to better understand the impacts, the destabilizing climatic patterns may have on human and national security, the appraisal of available policy and strategic responses by governments, the military, and non-governmental actors will be given due consideration. Based on that, the article will seek to bring together viable policy options that should prove well suited for improving global governance architecture/ framework oriented towards abetting/ with regard to environmentally induced conflicts, population displacements, and serious political and diplomatic disequilibria.

Environmental Change and Conflict: An Overview of strategic drivers of the international security consensus

Environmental security, Richard Matthew et al. note in "The Elusive Quest: Linking Environmental Change and Conflict," is a highly contested term which seeks to account for disparate forms of human vulnerability by relating them directly to resource scarcity and its consequents, chief among them, vio-

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5   CIA News and Information, "CIA Opens Center on Climate Change and National Security", Central Intelligence Agency, https://www.cia.gov/news-information/press-releases-statements/center-on-climate-change-and-national-security.html, (accessed 23 April 2014).
6   Corneliu Bjodi, "Keeping the Arctic 'Cold': The Rise of Plurilateral Democracy?," *Global Policy* 4, no. 4 (2013): 347.

lent conflict. Although, consensus on the directionality of causation is presently lacking, some scholars have underscored the importance of positing climate change in the context of political, social, and economic variables. Advocates of this, most prominently, Thomas Homer-Dixon, believe that environmental factors are necessarily related to intra- and inter-state conflicts and present a viable threat to national and international security.[7] Scarcity of renewable resources caused by patterns of global warming, Homer-Dixon and scholars affiliated with the Toronto School contend, may precipitate in economic decline, social segmentation, and mass population migration, thus putting significant stress on national infrastructures with predictably negative socio-political effects.[8] Gleditsch and de Soysa hold that environmentally induced depletion of resources will reduce agricultural production and create extreme conditions of poverty and food scarcity, which increase the probability of conflict. Societies, challenged by limited knowledge base and constrained by inadequate human, social, and institutional capital as well as confronted by their own domestic "ingenuity-gap", Homer-Dixon argues, will be increasingly unable to quickly and effectively adapt to the shifting and fluctuating conditions on the ground, causing them to fall into social disrepair and violence.

Critics of the above view contend that resource scarcity ought not to serve as a sufficient explanatory variable of social unrest and violent conflagration. Alleging myopic view of the causes underlying conflict, some scholars argue for a more expansive and more convincing explanation of its determinants. Notwithstanding the proliferation of bleak climate change scenarios and their adverse implication, Richard Matthew, Geoffrey Dabelko and Steve Lonergan hold that human proclivity toward innovation and adaptation is much more robust and dynamic than scholars such as Homer-Dixon allow. By countering overt conflict with cooperation, these scholars believe, it is increasingly possible to imagine that future trajectory of development and adaptation will be guided by collective and inter-state problem solving. Such a pronounced plurilateral response to climatic variations will very likely result in greater democratic and trade openness, development of coping and adjustment mechanisms through the introduction of intergovernmental entities and panels for global climate norms regulation and oversight as well as emergence of active and mobile networks of transnational legal regimes

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7   Thomas Homer-Dixon, and Jessica Blitt (eds.), *Ecoviolence: Links among Environment, Population, and Security* (New York: Rowman and Littlefield, 1998).

8   Thomas Homer-Dixon, *Ingenuity Gap* (New York: Knopf, 2000).

and nongovernmental organizations working to abet and eradicate the root causes of resource scarcity and resource competition-induced conflicts.

To counter the scholarly pessimism surrounding the relationship between environmental stress and security concerns, Richard Matthew recommends embracing an expanded mid-temporal range view of the problem. In so doing, questions of mal-adjustment, poverty, and scarcity, which have come to dominate scientific-social research and discourse, will lose their urgently compelling power, revealing instead a potential for learning, innovating and adapting to the effects of the much changed environmental scenario, rather than merely glimpsing with alarm on its fragmented, short-term picture. And, although the possibility for poverty and violent conflagration assisted by weak political institutions is a present and abiding possibility, the view of "societies collapsing into acute violence under additional burden of environmental stress may be mistaken."[9] The claim, however compelling, has failed to persuade. The current trend in political, diplomatic and military circles hints at increased investment in and commitment to drawing up detailed plans for a wide variety of contingencies, including, in addition to threats stemming from nuclear terrorism, deadly pandemics or biological warfare, the exploration of strategic political responses and military initiatives concerning sustainable security by the United States and India, among others.

Climate Change and the United States National Security Imperatives

The United States Department of Defense 2006 *Quadrennial Defense Review (QDR)* identified climate change as a serious threat to America's national security. The "irregular, disruptive, traditional, and catastrophic challenges are surfacing as a result of global climate change … with disastrous consequences" requiring blending of "the sustainability tenets of environmental security, ecological economics, and social/environmental equity with the pillars of democratic peace theory" with a purpose of "avoiding the unmanageable and managing the unavoidable."[10] Identifying global climate change as an asymmetric strategic and security challenge, the US Department of Defense, fearful of the potential disruptions to its operational and tactical capabilities, deems the creation of a tangible "roadmap to victory" over its climatic superior, an indispensible tool in the military arsenal. The

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9   Richard A. Matthew et al., "The Elusive Quest: Linking Environmental Change and Conflict," *Canadian Journal of Political Science* 36, no. 4 (2003): 864.

10 John T. Ackerman, "Climate Change, National Security, and the Quadrennial Defense Review," *Strategic Studies Quarterly*, (Spring 2008): 56.

report recognizes that the 'chaotic climate system' will bring about precipi-
tous surprises and much uncertainty, necessitating conventional and un-
conventional responses, encouraging "innovation, agility and adaptability,
collaboration and partnership"[11] in the interest of protecting the nation's
security. Such an endeavor, the US Defense Department recognizes, can
yield dividends if agile, dynamic and continuous change and reassessment
of strategies will readily inform the building of networks of global commu-
nication, cooperation, and intelligence gathering. Ackerman points out that
operationalizing the strategy will require, however, a commitment to the miti-
gation of the effects of global climate change and resilient adaptation to its
inhospitable consequences.[12]

By placing climate change on par with other security threats, i.e. ter-
rorism, the US Department of Defense aims to accentuate the severity of
its potentially adverse outcomes and consolidate a capacity and capability
building efforts necessary for authoritative and successful response and
management of eventual crisis situations. It is projected that such an ini-
tiative will require the Department to acquire resources for building 'part-
nership capacity' and 'outsourcing' authority in delegating tasks to other
subcontracting entities; install precautionary measures which would ease or
eliminate possibility of escalation of conflict or "prevent problems from be-
coming conflicts and conflicts from becoming problems"[13]; and increase the
freedom to act aggressively against threats with all "elements of national
power, not just the military."[14]

The report recognizes that for the United States to be successful in its
stated mission, it must adjust its initiatives to four main categories of pro-
spective environmental challenges: traditional; irregular; disruptive; and
catastrophic. Although, present US interests already call for mobilization
of traditional military instruments in conventional activities, environment-
driven challenges may necessitate deployment of the military in severe in-
stances of mass flooding, droughts, and heat waves. It is acknowledged that
climate change would also extend the duration of deployment and "magnify
the scale and intensity"[15] of the problem at hand. Shifts in seasonal snow-
melts, increase in droughts, quadrupling frequency of wildfires, extreme
precipitation resulting in devastating floods, lengthened cyclone season,
and threats of disease outbreaks and large-scale pandemics, can lead to

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11 Ibid., 57.
12 Ibid., 58.
13 Ibid., 59.
14 Ibid.
15 Ibid., 60.

mass population migrations and put significant stress on state infrastructure and administration with significantly destabilization impacts on respective governmental entities. Researchers predict "a sea level rise of one to five meters by 2100 would displace roughly between 130 and 410 million people."[16] Such a scenario, the report concludes, must meet with realistic and urgent military and logistical planning. The loss of the means of subsistence following widespread natural disaster, presents the military with an irregular challenge, that of massive movements of 'environmental refugees.' It is projected that the expansion of arid landmass and deserts in China, Tunisia, Morocco, and Libya, as well as soil erosion in Egypt, Turkey, Louisiana, and Alaska, alone, will intensify the migratory patterns of populations and put significant stress on potential host countries, requiring support and management mechanisms suitable for attenuating prospective outbreak of social, economic, and political frictions and conflict.

Erosion, desertification, deforestation, irregular floods and droughts, and pandemics can also prove disruptive to vital US security interests. It is predicted that climate change-induced famine, water stress, and vector-borne disease will, in the severity of their consequences, exceed those resulting from revolutionary political upheavals or technologies aimed at countering US interests and capabilities. The US Department of Defense recognizes that risk of recurrent pandemics will have "broad and complex ecological, security, and social ramifications for humans"[17] pushing many states to the brink of failure and collapse, thus dispersing further the risk of social and political destabilization across ever wider regions of the globe. State failure contagion induced by environmental stress will present the United States with catastrophic challenges, comparable only, the Defense Department projects, to "WMD-like effects against US interests."[18] Security specialists contend that suboptimal living standards in parts of Asia, Africa, and the Middle East, exacerbated by degradation of the environment, collapse of natural ecosystems and its attendant health and social consequences, will significantly upset normal patterns of subsistence, degrade the quality of life, and increase the probability of political instability and state failure. Moreover:

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16 Robert J. Nicholls et al., "Global Estimates of the Impact of a Collapse of the West Antarctic Ice Sheet," 2006, http://www.mi.uni-hamburg.de/fileadmin/fnu-files/projects/atlantis/annex6.pdf, (accessed 23 April 2014).

17 Ackerman, "Climate Change, National Security, and the Quadrennial Defense Review," 69.

18 Ibid.

> Economic and environmental conditions in already fragile areas will further erode as food production declines, diseases increase, clean water becomes increasingly scarce, and large populations move in search of resources. Weakened and failing governments, with already thin margin for survival, foster the conditions for internal conflicts, extremism, and movement toward increased authoritarianism and radical ideologies.[19]

Climate-induced population movements in the Darfur region of Sudan and across political borders between Bangladesh and India have already significantly contributed to the renewal of tensions, depleting sources of political toleration and increasing the likelihood of violence.

The US Department of Defense's sensitivity to terrorism-breeding conditions compels it to acquire means and technologies for facing grave and unpredictable threats of climate-change in order to strategically respond to and gain control over its inevitable socio-political corollaries. The sustainable security strategy promoted by the Department of Defense aims to marry the sustainability paradigm with democratic peace theory. The historically American acknowledgement of the "innate right of all people to free, equitable, and secure lives"[20] extends to the questions of environmental vulnerability of populations and states, and calls for a development of checks and balances that are better attuned to the promotion of universal justice and fair governance. The United States recognizes that "cooperation and concern for one's neighbor" will require a degree of trust in inter-state intelligence sharing, collective action strategizing, and technology transfers, in addition to economic and scientific research cooperation with an end goal of promoting social and environmental equity, security, and justice. Contributing to the plethora of voices and arguments concerning environmental security, scholars, well-versed in disaster-relief and climate change challenges, propose invasive changes to US legislation in the form of a new National Security Act, which would be configured to "oblige intergovernmental cooperation and support for formal planning"[21] and codify, thus, the goodwill of intra- and inter-governmental agencies into a holistic and legally-binding security policy.

India's Military Strategy and Prospects for Environmental Security

19 Ibid., 73.
20 Ibid., 77.
21 Douglas V. Johnson, "Global Climate Change: National Security Implications," 2007, www.strategic-studiesinstitute.army.mil, (accessed 23 April 2014).

The political and social implications of the anthropogenic climate change and the predicted trajectory of global warming also commands much attention in states laying at the very fault lines of prospective climate-induced conflicts. The 2008 Indian National Interest Policy Brief, in its attempt to assess the subcontinent's vulnerability to extreme weather patterns and security concerns issuing therefrom, points to three key areas of strategic concentration: international cooperation; management of "hot peace"; and, outright military conflict.[22] The cumulative effect of glacial recession on the Tibetan plateau, rising sea levels and extreme weather patterns characterized by increasing intensity of cyclones and floods, are likely to result in the submergence of low lying areas, including river deltas, coastlines and small islands and put the population of Karachi, Mumbai, Dhaka, and Mangalore at a significant existential risk, while at the same time, imperiling the livelihood of the people of Bangladesh, Sri Lanka, Myanmar, and Pakistan.[23]

Figure 1. Impact of Climate Change on Ongoing Conflicts in the Indian Subcontinent

Conflict System Impact mechanism	Glacial recession	Rising sea levels	Extreme weather	Net assessment
Jammu & Kashmir	High	-	Medium	Risk or war, motivated in part by the quest for water resources
India-China border	High	-	Medium	Risk of natural disasters in India, worsening India-China relations
Bangladesh 'ethnic invasion'	High	High	High	Risk of mass migration into India
Pakinstani separatism	High	Medium	Medium	Risk of existential crisis in Pakistan, and of ethnic conflict
Sri Lankan civil war	-	High	Medium	Risk of mass migration, and of ethnic conflict
Nepal civil war	High	-	High	Risk of natural disasters and mass migration into India due to social unrest
Table 1: Impact of climate change on ongoing conflicts in the Indian subcontinent				

Source: The 2008 Indian Policy Brief, p. 3.

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22 Nitin Pai, "Climate Change and National Security: Preparing India for New Conflict Scenarios," *The Indian National Interest Policy Brief* 4, No. 1, (April 2008): 1-9.

23 Ibid.

Due to already strained relations with Pakistan and unresolved inter-state disputes with regional actors, India considers the risk of renewed conflagration with its neighbors to be high, provoking ethnic conflict, social unrest and mass migration. Pakistan's insistence on fair distribution of water in the Jammu and Kashmir region, which is an important factor in Pakistan's strategic calculations, according to Pai, is also a necessary prerequisite for the resolution of conflict between the two countries. In India's assessment, a water deficient Pakistan may be more likely to sabotage water-management infrastructures and renew the possibility of tensions and cross-border skirmishes. Moreover, the risk of natural disasters in India is also more likely to worsen India-China bilateral relations. A characteristic feature of the countries' political cooperation is their mutual commitment to weather and disaster related collaboration and sharing of information. Severe landslides, which affected India in 2004, however, pointed to Chinese reluctance to alert in a timely manner the Indian subcontinent of an impending natural disaster. It is projected that should the Chinese continue to resist living up to the obligations of their bilateral agreements with India, future relations may very likely be characterized by mutual suspicion and distrust. Any overt monopolization of resources, such as China's attempt to take full control of the waters of the Himalayan Rivers by diverting their natural flow, may be perceived as tantamount to "a declaration of water war" on India and Bangladesh.[24]

The Indian government fears that rising sea levels, flash floods, and severe cyclone cycles will inundate the subcontinent with mass migrations from Sri Lanka and Nepal, precipitating in a refugee crisis and putting further stress on the country's already vulnerable infrastructure systems. The Indian Policy Brief points to nine key scenarios which may necessitate the employment and deployment of Indian armed forces, they are: providing support to water-management facilities in Jammu and Kashmir against potential sabotage and system disruption; fighting limited conflicts in Jammu and Kashmir to secure India's control over the dams, irrigation headworks, and hydro-electric power plans; engaging in "reconnaissance and covert action along the India-China frontier to ensure uninterrupted flow of water"; "erecting *cordons sanitaire* in districts adjoining Bangladesh to manage the refugee crises"; "building, maintaining, and securing ... aircraft landing strips, helipads, and staging areas in neighboring countries"; providing humanitarian relief inside Bangladesh and Sri Lanka; intervening in neighboring states for humanitarian relief and peacekeeping purposes; securing

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24 Ibid.

"vital installations" against Pakistan in neighboring provinces; and, lastly, cooperating with the United States, NATO, China, Russia, and Japan in humanitarian relief missions in and around the subcontinent and the Indian Ocean region.[25]

Urgent concern for the Indian military, as for its United States counterpart, lies in its urgent personnel and strategy enhancements and significant technology upgrades. Having recognized the necessity of improved interstate cooperation, India, nevertheless, had stressed the importance of acting, whenever possible, in its own narrowly defined self-interest. The country's strategy of 'hot-peace' characterized by frequent deployment of armed forces to quell aggressive behavior of its more belligerent neighbors, Indian officials believe, will prove a suitable deterrent policy, which will effectively extinguish any prospects for resource-based and environmentally-induced large-scale wars.

Environmental Challenges and International Norms Regimes: A Quest for Consensus

In light of rising concerns over environmental security, the question of the means by which self-interested states will find themselves sufficiently willing and capable of informing the emerging and increasingly important global environmental norms regime for the purposes of addressing environmental scarcity and climate change, remains vital. Recognition of climatic interdependence necessitates a reevaluation of legal coping mechanism and entrenched value systems. Non-governmental panels and organizations can play a key role in initiating a comprehensive environmental legislation, which once enacted within the legal regime of the United Nations, would acquire an *jus cogens* status, or a non-derogable and universally binding legal-normative standing, operating on a global scale, irrespective of whether governments are willing to accept the theoretical and scientific claims of a direct causal path between environmental degradation, resource scarcity and violent conflict.[26] Such global environmental legislation may be compromised, however, by a lack of scholarly consensus on the proximate relation between climate and the potential for political destabilization. A quantitative cross-national time-series study covering the 1950-2000 period conducted by Henrik Urdal of the Centre for the Study of Civil War, International Peace Research Institute in Oslo (PRIO), does not collaborate the neo-Malthusian per-

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25 Ibid.
26 See Thomas Homer-Dixon's *Ecoviolence: Links among Environment, Population, and Security* (New York: Rowman and Littlefield, 1998).

spective advocated by Thomas Homer-Dixon, whose main premise for the inevitable conflict scenario rests in the recognition that population growth will likely exert increased pressures on the earth's renewable resources making societies consequently prone to low-intensity civil war. Urdal's empirical research reveals that post-Cold War age of environmental insecurity, which calls for the introduction of decisive measures aimed at curtailing or controlling population growth and military preparation are, at best, unfounded and, at worst, much too hyperbolized.

Undergirding the concerns expressed in the above cited military and national security reports issued by the United States Department of Defense and India, are three key destabilizing factors which stay loyal to the dominant neo-Malthusian consensus which dominated the post-Cold War discourse, those of: conflicts over resources; environmental (in)security; and population migrations. Henrik Urdal's 2005 large-N study of conflict prone areas, attempted to disabuse scholars and policymakers of the claims that "the world has entered a 'new age of insecurity' after the end of the Cold War, where demographic and environmental factors threaten security and state stability." Urdal claims that treating population pressure on natural renewable resources and resource-scarcity variables as culpable for making "societies more prone to low-intensity civil war" or using them as a "macro rationale for reducing global population growth" urbanization, or refugee migration, seem unwarranted and do not provide sufficiently strong reasons for commanding an expended military and political attention. His research disconfirmed the link between conflict and resource scarcity, while asserting that countries that host large refugee populations are not any more likely to experience domestic armed conflict or ethnic violence than countries that do not.[27]

Others, such as Richard Matthew, vehemently argue for paying increased attention to macro and micro-level mechanisms for adaptation that would delay, mitigate or resolve impending resource-based and climate change-induced conflicts. Contending for adaptation strategies in lieu of military planning, Matthew believes that the very dynamism of 'action-response-reaction' cycle merits more attentive concentration of policymakers and security strategists on technological innovation, environmental regulation, state-capacity building through regional regimes, greater "political openness, economic exchange and value change fostered by the activities of international

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27   Henrik Urdal, "People vs. Malthus: Population Pressure, Environmental Degradation, and Armed Conflict Revisited," *Journal of Peace Research* 42, no. 4 (2005): 426-430.

organizations and other non-state actors."[28] Moreover, by recognizing the value of micro-interventions by farmers experimenting with alternative crops and streamlining relocation of populations may abate the unsettling concerns presently shared by defense ministries and political heads of state. While acknowledging limitations to adaptation in the face of high-impact natural disasters, Matthew advocates expanding the time frame for assessing the success of human adaptive output.

Figure 2. Revised Theoretical Model of the Relationship Between Environmental Stress, Adaptation and Conflict.
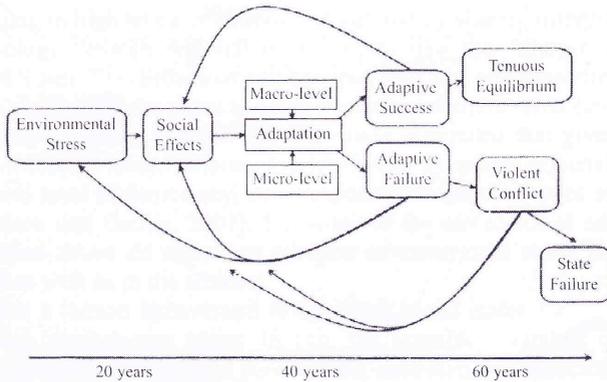
Source: Matthew (2003), p. 867.

As such, governmental processes and policy prescriptions which are connected to economic restructuring, building of sustainable regional institutions, and democratization of internal mechanisms for more open information sharing and inter-state cooperation will require a significant investment of time and may not amenable to short-term evaluation. Thus, to find effective strategies and policy solutions and "to understand better how environmental stress and conflict are related, one needs to take a longer look at how societies respond to environmental stress."[29] Reliance on 'brief time frames' may compound the severity of a single phenomenon and result in spurious conclusions, which inevitably obfuscate the rationale for and choice of adequate remedial and counteractive measures. And, although, embracing a cornucopian vision advocated by resource-optimists, which insists on humankind's uncanny ability to transform scarcity into opulence via economic discipline and technological innovation, may prove deleterious to

28 Matthew et al., "The Elusive Quest: Linking Environmental Change and Conflict," 867-8.
29 Ibid., 871.

fashioning realistic responses to substantial changes in weather patterns, many would likely agree that one should not underestimate the role of civilian adaptive mechanisms in ensuring environmental security.

International Law Mechanisms and Value-based Policy Prescriptions

Tangible reorientation in the scale and quality of human values and ethical principles concerning the environment may reduce the "quantity and quality of life choices" and put the ethos of "sacrifice" at the forefront of individual action.[30] The derivative benefits to such a compromise may encourage a logic that is increasingly steered by expanded circle of concern for international environmental justice, equity in resource distribution, and sustainable development. Concerns over implosion of states at the brink of environmental disaster are justified as long as evidence exists to collaborate such a condition. India's militant stance regarding Pakistan, for instance, may rest on false premises concerning its environmental intentions and jeopardize political relations already steeped in mutual distrust and persistent enmity. A number of security analysts and scholars point to Pakistan's likely collapse under the demands of environmental stress imposed by deforestation, soil erosion, mudslides, flooding, influx of Afghan refugees, and population growth. Yet, a closer look at Pakistan's initiatives and collaboration with international organizations warrants a much more nuanced conclusion. The country's recognition of the potentially perilous effects of climate change on its infrastructural and administrative capacity prompted Pakistan to integrate and adapt itself to the prescripts of the international environmental norms regimes, and actively seek out the assistance of nongovernmental organizations in coping with resource scarcity and crop insecurity in the agricultural sector. Moreover, environmental NGOs, such as the "International Union for the Conservation of Nature, the Aga Khan Foundation and Sustainable Development Policy Institute are experimenting with reforestation and alternative energy resources such as mini-hydroelectric plants" while encouraging dialogue between landowners, refugees, and government officials.[31] Since Pakistan ranks high on the list of strategic partners in the 'war on terrorism' and is an influential actor on the Middle Eastern and Asian political arena, its incorporation into the international community and cultivation of a 'special relationship' with the United States, guarantees an infusion of monetary support and foreign assistance funds necessary for the

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30 Richard Ullman, "Redefining Security," *International Security,* (1983): 127.
31 Matthew et al., "The Elusive Quest: Linking Environmental Change and Conflict," 870.

implementation of measures indispensible for the achievement of sustainable environmental security.

It is reasonable to assume, however, that countries that do not meet with an exceptional interest of foreign powers nor command the authority in strategic key areas of foreign policy, may meet with internal disintegration and collapse under the taxing effects of environmental degradation, unleashing a wave of civil strife, genocidal tendencies, insurgencies, strikes, riots, or coups.[32] The ongoing crisis in the Darfur region of Sudan is a case in point. Ackerman attributes the conflict's resurgence and duration to increasingly strained natural resource reserves, i.e. water availability, which prompted mass population movements. His research advances the view that "large movements of people in response to climate change will inevitably degrade environmental conditions in areas that receive the refugees."[33] Suboptimal ecosystem services, which have been unable to support the needs of the civilian population, have resulted in sizeable migrations of the desperate and disposed. Uneven migratory patterns and their intensity, in turn, have further taxed and exacerbated the already poor environmental conditions in Sudan and aggravated local residents, who have laid claim to the scarce resource base, fueling and intensifying the violence of conflict itself.[34] Similarly, the rising average winter temperatures in the geographic North are likely to uncover large swaths of arctic territories in Alaska, Canada, and Russia, provoking renewed tensions between states and issuing in a political scramble for land and resource-claims based on migration and settlement. It is not an accident, therefore, that complementary competencies of institutions such as NATO, the International Maritime Organization (IMO), the United Nations Development Program (UNDP), the Global Environment Facility (GEF) in conjunction with the Arctic Council and the 1982 United Nations Convention on the Law of the Sea (UNCLOS)[35] have been mobilized to ease anxieties over resource extraction and unregulated fishing and address the impending scramble for oil and gas resources and control of Arctic trade routes in the region.

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32 Thomas F. Hunter-Dixon, *Environment, Scarcity, and Violence* (Princeton: Princeton University Press, 1999), 136.
33 John T. Ackerman, "Climate Change, National Security, and the Quadrennial Defense Review," 65.
34 Ibid., 65.
35 Bjordi, "Keeping the Arctic 'Cold': The Rise of Plurilateral Democracy?," 348.

Conclusion: Assessing Impact, Promoting Ethics of Security-bound Environmental Activism

With fundamental national security interests at stake, desire to strengthen sovereignty over vital resource bases and a determination to maintain competitiveness in global markets, countries torn between environmental protection and sustainable development, security and potential for rapid conflagration of climate change-induced conflict in the early decades of the twenty-first century, may do well to engage in what Bjola dubs 'plurilateral diplomacy'. Significant climatic transformations thus warrant creation of a plural governance architecture consisting of an "effective web of contracts involving institutional networks" and agencies that are both quick and flexible.[36] Global governance gaps can be closed and rigid multilateral and bilateral legal mandates can thus be supplemented with pluralist diplomatic initiatives which develop sturdy foundations that allow relevant stakeholders to "reduce transaction costs, share critical resources, exchange know-how, and facilitate the implementation of agreements"[37] in addition to trading crucial intelligence and abiding by the terms and conditions of jus cogens norms of international law and pertinent values of the international community. Likewise, the contributions of the International Court of Justice (ICJ) to the development of International Environmental Law have potential for standardizing legal expectations in the arena of contested environmental policymaking, abetting interstate conflict and compensating for transboundary injuries in line with well-recognized principles of international law and elementary considerations of humanity. Thus, in holding states liable for failing to live up to the standards of the Charter of the United Nations and auxiliary international conventions and declarations, the ICJ can ably delineate the scope of responsibility for the misappropriation of states' jurisdictional powers and limit recurrent damage to the environment and resulting social and economic harm as well as eliminate the root causes of and prospects for intra- and inter-state conflict.

In addition to the above, it is equally important to underscore human security and wellbeing in the climate change response and adaptation scenarios in order to adjust accordingly the economic, political and diplomatic efforts of states in the mitigation of conflict and protection of the most vulnerable strata of society. The Intergovernmental Panel on Climate Change (IPCC) introduced into an ecological health lexicon a "monetizing" effect in

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36   Ibid., 347.
37   Ibid., 353.

its assessment of the seriousness of environmental impacts on human populations and reinvigorate further commitment their mitigation. In its report on "Integrated Assessment of Potential Vulnerabilities and Impacts" IPCC argues, at length, for:

> Integrating the range of potential impacts of climate change [in order] to derive a comprehensive monetary estimate, which adds all impacts expressed in their dollar value. This approach allows for comparison of the seriousness of climate change with other problems, comparison of vulnerabilities to climate change among regions and sectors, and comparison of the impact of climate change with the impact of greenhouse gas emission reduction. Expressing effects on marketed goods and services (e.g., land loss resulting from sea-level rise, energy savings in winter) in monetary terms is relatively straightforward because the price is known. Expressing damage to nonmarketed goods and services (e.g., wetland loss, mortality changes) in monetary terms can be accomplished by examining market transactions where such goods or services are implicitly traded (e.g., landscape beauty) or by interviewing people about their preferences. That is, human preferences are expressed by people's willingness to pay to secure a benefit or their willingness to accept compensation for a loss.[38]

The modeling of impacts along the proposed scale can offer a persuasive argument for action and spur economic innovation necessary for the advancement of counteractive and remedial measures aimed at reduction of environmental security risks. In congruence with the premises of Democratic Peace Theory, the cumulative effect of economic cooperation across states and all technological spectra under an umbrella of a regulatory global climate regime can reduce anxieties over environmental devastation and propel collaborating states toward greater stability and more sustainable peace. The recognition of the financial burden climate change poses to individual economies, can very well issue in what Peter Singer terms, a "community of reciprocity", which "entwined in a common fate, sacrifices and compromises"[39] in the name of distributive justice and mutual well-being. By abandoning thus the zero-sum logic of belligerent realism, states, compelled by the imperatives of their own vulnerabilities to drastic climate changes and strategic insecurities, may come to embrace and encourage, on the economic and entrepreneurial side, the promotion of viable:

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38 Martin Beniston (ed.), "The Regional Impacts of Global Climate Change," *Intergovernmental Panel on Climate Change*, 2005, http://www.ipcc.ch/ipccreports/sres/regional/119.htm#integrated, (accessed 23 April 2014).

39 Peter Singer, *One World* (New Haven: Yale University Press, 2002), 168.

i) Market-based programmes in which customers or manufacturers are pro-
vided technical support and/or incentives; ii) increased emphasis of private
or public programmes to develop more efficient products" and to encourage
technology transfers, and information sharing.[40]

Economic cooperation buttressed by political consensus is all the more es-
sential in the face of probable violent struggles over scarce resources and
proliferation of environmental problems that are likely to emerge during
coming decades. Therefore, to eliminate the possibility of: "disputes arising
directly from local environmental degradation"; "ethnic clashes arising from
population migration and deepened social cleavages"; "civil strife caused
by environmental scarcity that affects economic productivity and ... people's
livelihoods," and the ability of groups to meet changing demands; "scarcity-
induced interstate war over natural resources; and, North-South conflicts
over mitigation of, adaptation to, and compensation for global environmen-
tal problems,"[41] it will become increasingly necessary to compound not only
the cumulative knowledge base of states, but reassess the critical role that
intergovernmental and non-governmental entities can play in the negotia-
tion, regulation, and distribution of counteractive, proactive and reactive
measures aimed at promotion of democratic stability and economic pros-
perity in the context of resource depletion and appreciable threats to human
existence and flourishing. **Y**

40 Robert T. Watson (ed), "Technologies, Policies and Measures for Mitigating Climate Change," *Inter-
governmental Panel on Climate Change*, 1996, http://www.ipcc.ch/pdf/technical-papers/paper-l-
en.pdf, (accessed 23 April 2014).
41 Homer-Dixon, *Environment, Scarcity, and Violence,* 5.