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‘Human Securitising’ the Climate Security Debate

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Abstract

Efforts to understand the connection between climate change and national, regional and international security have fuelled something of a climate security industry, evidenced in a range of reports from governments, international organisations, and non-governmental organisations. In much of this, particularly those works produced by defence agencies and individual governments, the focus has been on threats to national security through civil unrest and violence that derive from competition for resources, access to environmental services, and the unregulated movement of people in the face of ecosystem collapse. This paper reinstates a human security approach. It explores not just the human insecurities that are generated by climate change, with a particular focus on the Asia-Pacific, but examines how human security models provide (i) different ways of interpreting climate conflict 'triggers' and (ii) different and more effective strategies for responding to climate insecurity. This involves an analytical move from risk to vulnerability and a strategic move from mitigation to adaptation and social resilience. Despite the challenges that this presents for more orthodox approaches to security, it is also more certain to deliver outcomes that can guarantee security for both peoples and for states.

Biography

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This Policy Series presents papers in a preliminary form and serves to stimulate comment and discussion. The views expressed are entirely the author's own and not that of the RSIS Centre for Non-Traditional Security (NTS) Studies. The paper is the result of research conducted under the Asia Security Initiative programme on internal challenges supported by the MacArthur Foundation. Visit www.asicluster3.com to find out more about this initiative. More information on the work of the RSIS Centre for NTS Studies can be found at www.rsis.edu.sg/nts.

Policy recommendations

- Plans of action for climate security should be developed at national and regional levels. The development of those plans should include consultation with multiple stakeholders, including civil society groups, non-governmental organisations, academic and scientific researchers, and the corporate sector. Where such plans already exist, they should be re-evaluated to ensure that human security is given adequate attention and appropriate priority. Donor countries should be encouraged to increase their support for capacity building to enhance local and national expertise in the development and implementation of climate security plans of action.

- Climate security plans of action should include strategies for establishing and implementing early warning systems to identify those who are most vulnerable and to assess the nature and extent of that vulnerability.

- Governments, regional organisations and international organisations should ensure that health and food security issues are integrated into policies for adapting to climate change and that those policies support inter-agency cooperation and information exchange.

- Climate security plans of action should include guidelines for institutional practices to manage competition for scarce environmental resources and services such as water and arable land. Those practices should include equity provisions and should take account of the needs of those who are most vulnerable to environmental scarcity.

- Regional and international organisations should support further research on the potential for and the nature of migration in response to climate change. Based on this research, governments at all levels should develop strategies to expand the range of adaptation options available to migration vulnerable communities and to support those communities in their adaptation choices.

Introduction

Climate change is a crucial issue for the Asia-Pacific. The Intergovernmental Panel on Climate Change (IPCC) reports a worrying litany of likely climate change impacts for the region: a decline in crop yield, an increase in climate-induced disease, an increased risk of hunger and water scarcity, an increase in the number and severity of glacier melt-related floods, significant loss of coastal ecosystems, a high risk of flooding for many millions of people in coastal communities, and an increased risk of extinction for many species of fauna and flora. In its report on the economics of climate change in Southeast Asia, the Asian Development Bank concludes that the region is 'likely to suffer more from climate change than the rest of the world', and that 'the potential economic cost of inaction is huge'.[1]

As global concerns over the impacts of climate change increase, assessments of the likely social, political and economic consequences have taken on a great degree of urgency. This sense of urgency has now extended to the security sector. The proposition that environmental degradation in general and climate change in particular are or should be considered security concerns is no longer a novelty on the non-traditional security agenda. Put broadly, environmental security falls within two sometimes competing approaches to non-traditional security (other terms include new security, transnational security, comprehensive security, and non-conventional security). The first of these focuses on non-traditional threats to traditional 'referent objects' (that is, states) and worries about the potential for conflict and political violence as a result.[2] The primary security problematic remains one that focuses on the maintenance of order and stability and the protection (or securing) of those values that are associated with statehood: political independence, territorial integrity and internal order. The second takes account of what might be called 'non-traditional' referents, including individuals, communities, societies, economies and, where environmental issues are concerned, possibly even species and ecosystems. Of the two security models, it is the more traditional statist approach that has dominated the recent resurgence of interest in the link between security and climate change. In a series of reports prepared by government agencies and defence and security think tanks, climate change is presented as a threat multiplier, overstretching societies' adaptive capacities and creating or exacerbating political instability and violence, possibly to the extent of inter-state conflict.

Two themes are prominent in the various claims and analyses offered from within this climate security industry. First, climate-related instabilities are frequently posed as threats

[1] Asian Development Bank (ADB), *The economics of climate change in Southeast Asia: A regional review*, Manila: ADB, 2009, p.xxvi.

[2] The literature on environmental security is now extensive. For useful explorations of the various interpretations and contestations surrounding the term and its policy implications see: Simon Dalby, *Environmental security*, University of Minnesota Press, 2002; Jon Barnett, *The meaning of environmental security*, Zed Books, 2001; Lorraine Elliott, *The global politics of the environment*, New York University Press, 2004, Chapter 9; Lorraine Elliott 'Environment and security: what's the connection?', *Australian Defence Force Journal*, No. 174 (2007), pp. 37-50.

only to the extent that they have 'grave implications for [the] national security' of developed countries, through problems of conflict spill-over, destabilising impacts on the security of regions of strategic interest, or because they generate further threats to the integrity of sovereign borders.[3] Second, human security concerns often appear incidental, or relevant only when those who are affected or made insecure by the impacts of climate change are characterised as the likely source of social tension, civil unrest and other pressures. Yet it is people, particularly in developing countries, who ultimately bear the cost of climate-related environmental harm through increased vulnerability to poverty, disease, loss of livelihoods, food insecurity (sometimes to the extent of real malnutrition and starvation), and disasters of nature. Unlike the wealthy, 'poor people often lack access to alternative services … live in locations that are vulnerable to environmental threats and lack financial and institutional buffers against these dangers'.[4]

The purpose of this paper is to explore these issues in more depth and to examine the contribution that a focus on human security can make to the ways in which policymakers should approach the challenges associated with climate security. In particular, it suggests that a human security approach can actually offer more effective purchase on the problems of instability and social conflict through directing attention to vulnerability rather than risk, and to the importance of social resilience as a security strategy.

Securitising Climate Change

In August 2009, the UN Secretary-General Ban Ki-moon told a Global Environment Forum in Korea (at the same time that governments were meeting in Bonn for five days of informal climate negotiations) that failure to act quickly on climate change could lead to a worsening of tensions, social unrest and even violence.[5] This was not the first time that the Secretary-General, who has made climate change a touchstone issue of his incumbency, has expressed these kinds of concerns. In March 2007, at a meeting of youth delegates at UN headquarters in New York, he suggested that 'in coming decades' climate-related 'changes in our environment and the resulting upheavals — from droughts to inundated coastal areas to loss of arable lands — are likely to become a major driver of war and conflict'.[6]

The Secretary-General's August 2009 speech was only the latest warning about climate-induced conflict and instability in what has become a burgeoning climate security industry

[3] See, for example, The CNA Corporation, *National security and the threat of climate change*, The CNA Corporation, 2007, p. 3.
[4] Global Leadership for Climate Action (GLCA), Facilitating an international agreement on climate change: adaptation to climate change, GLCA, 2009, p. 16.
[5] Remarks by the United Nations Secretary-General to the Global Environment Forum, Incheon, Republic of Korea, 11 August 2009, <http://www.un.org/apps/news/infocus/sgspeeches/statments_full.asp?statID=557#> (accessed 12 October 2009)
[6] Address to the United Nations International School-United Nations Conference on Global Warming: Confronting the Crisis, 1 March 2007, <http://www.un.org/apps/news/infocus/sgspeeches/search_full.asp?statID=70>

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as scholars and policymakers attempt to better understand the possible security threats associated with climate change. Few reports are quite as alarmist as the 2004 report commissioned for (and then suppressed by) the Pentagon which warned that in the face of catastrophic climate change, 'nuclear conflict, mega-droughts, famine and widespread rioting' would erupt across the world as a result of climate change and competition for food, water and energy. Disruption and conflict, the authors predicted, would become 'endemic features of life'.[7] Yet while most reject this dystopia, all assume that some form of disruption and conflict – ranging from civil unrest through inter-communal violence to political radicalisation and, in extreme situations, state collapse – is likely even though the empirical evidence for such claims is often thin.

The 2006 Stern report on the economics of climate change, prepared for the UK government by a former chief economist of the World Bank, suggested that climate change could 'create risks of major disruption to economic and social activity … on a scale similar to those associated with the great wars and economic depression of the first half of the 20th century'.[8] In a widely reported move in January 2007, the Board of the Bulletin of Atomic Scientists moved the hands of the Doomsday Clock from seven to five minutes to midnight, concluding that 'global warming poses a dire threat to human civilization that is second only to nuclear weapons'.[9] At the same time, the UK's Ministry of Defence (MoD) released the latest in its strategic trends series identifying climate change, a shifting environment, and increased demand for natural resources – especially food, water and energy – as challenges to stability that would create new sources of insecurity and tension.[10] A few months later, in April 2007, a panel of retired US admirals and generals released a report in which they argued that climate change constituted a significant threat to US national security interests.[11] In the same month, under the presidency of the UK, the UN Security Council held its first debate on global warming. The British Foreign Secretary at the time, Margaret Beckett, told the Council that the threat from climate change has 'grown larger in scale and sharper in outline' with consequences that 'reach to the very heart of the security agenda'.[12]

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[7] Cited from Mark Townsend and Paul Harris, 'Now the Pentagon tells Bush: climate change will destroy us', *The Observer*, 22 February 2004. Online. Available HTTP: <http://www.guardian.co.uk/environment/2004/feb/22/usnews.theobserver>. Admittedly, the report was explicitly intended to assess likely outcomes in the face of *abrupt* climate change. See Peter Schwartz and Doug Randall, *An abrupt climate change scenario and its implications for United States National Security*, October 2003, for a public version of the report.

[8] Sir Nicholas Stern, *The economics of climate change*, HM Treasury, 2006.

[9] 'Doomsday Clock Move '"Two Minutes" Closer to Midnight', *The Bulletin of the Atomic Scientists*, 17 January 2007. Online. Available HTTP:<http://www.thebulletin.org/minutes-to-midnight/board-statements.html>

[10] *Global Strategic Trends 2007-2036*, 3rd edition, Ministry of Defence, Development Concepts and Doctrine Centre, 2007.

[11] CNA Corporation, *National security and the threat of climate change*, The CNA Corporation, 2007.

[12] 'Margaret Beckett at UN Security Council Climate Change Debate', Foreign and Commonwealth Office Press Release, 16 April 2007. Online. Available HTTP: <http://www.fco.gov.uk/servlet/Front?pagename=OpenMarket/Xcelerate/ShowPage&c=Page&cid=1007029391629&a=KArticle&aid=1176454354972>

In September 2007, the London-based International Institute for Strategic Studies (IISS), which styles itself as the world's leading authority on political military conflict, included in its annual Strategic Survey a long discussion that characterised climate change as a potential 'existential security threat'.[13] The climate-security link was reinforced further in October with the awarding of the 2007 Nobel Peace Prize jointly to former US Vice President Al Gore and the IPCC for their work on climate change. In announcing the prize, the Norwegian Nobel Committee said that climate change presented a threat to the security of humankind which could bring with it 'increased dangers of violent conflicts and wars within and between states'.[14]

This flurry of activity continued into 2008 and 2009.[15] In March 2008, the High Representative and the European Commission prepared a paper on climate change and international security for the Council of the European Union.[16] In April 2008, the Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) published its report on *Climate Change and Security: Challenges for German Development Cooperation* on behalf of the German Federal Ministry for Economic Development and Cooperation.[17] Climate change featured in the UK government's first-ever National Security Strategy published in March 2008 and in a US National Intelligence Assessment in June later that year.[18] In June 2009, the UN General Assembly adopted a draft resolution sponsored by the Pacific Island countries which called (among other things) for a comprehensive report on the possible security implications of climate change to be prepared for the 64th session of the General Assembly.[19] In September 2009, the UK government appointed from within the ranks of the defence forces, a climate and energy security envoy, Rear Admiral Neil Morisetti, in response to their concerns that 'climate change will act as an increasingly powerful amplifier of instability across some of the most volatile regions of the world'.[20]

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[13] 'Strategic Policy Issues', *Strategic Survey*, Vol. 107, No. 1 (2007), p. 47. In September the UK Ministry of Defence also announced a £12 million contract with the UK Meteorological Office Hadley Centre to support research that would focus on the relationship between climate change and conflict, identify countries where there is conflict over food and water scarcity and examine the related conditions in which British troops might be deployed in the future.

[14] See <http://nobelpeaceprize.org/eng_lau_announce2007.html>

[15] Official reports and assessments have been matched by analyses from research institutes, think tanks and academic institutions too numerous to mention.

[16] *Climate change and international security*, Paper from the High Representative and the European Commission (HREC) to the European Council, S113/08, 14 March 2008.

[17] Alexander Carius, Dennis Tänzler and Achim Maas, *Climate Change and Security: Challenges for German Development Cooperation*, Gesellschaft für Technische Zusammenarbeit, 2008.

[18] Cabinet Office, *The National Security Strategy of the United Kingdom: Security in an interdependent world*, Cabinet Office, 2008; Thomas Fingar, National Intelligence Assessment on the National Security Implications of Global Climate Change to 2030, Statement for the Record before the House Permanent Select Committee on Intelligence, 25 June 2008.

[19] United Nations General Assembly, *Climate change and its possible security implications*, A/63/L.8/Rev.1, 18 May 2009.

[20] 'Climate Security: visit of Rear Admiral Neil Morisetti', Foreign and Commonwealth Office Press Release, 20 November 2009. Online. Available HTTP: <http://ukinnorway.fco.gov.uk/resources/en/news/11814644/21021347/climate-security>

Climate Change and Conflict

In much of this work, efforts to understand the triggers and pathways that link climate change to conflict and instability, and thus to security, have relied on an updated version of predictions made by scholars in the late 1980s and early 1990s that environmental degradation could contribute to instability, the 'disruption of legitimised and authoritative social relations'[21] and 'civil turmoil and outright violence'.[22] In its 2007 Strategic Survey, for example, the IISS suggested that 'the security dimension [of climate change] will come increasingly to the forefront as countries begin to see falls in available resources and economic vitality, increased stress on their armed forces, greater instability in regions of strategic import, increases in ethnic rivalries, and a widening gap between rich and poor'.[23] A second assumption that characterises the current climate security literature is that the sources of national and societal insecurity will be equally as much internally- as externally-generated.

These are complex processes. The proximate triggers for intra-state social unrest and inter-communal violence are usually argued to involve competition for scarce resources (including water and energy), food insecurity, and pressures that result from internal migration spurred by the impacts of climate change on local environments. This menu of concerns is not surprising. The reports of the IPCC show that climate change will result in a growing pattern of scarcity and vulnerability for an increasing proportion of the world's people. Hundreds of millions of people will be exposed to more severe water stress; cereal production will decrease in most latitudes in the longer term; millions more people will be vulnerable to extreme weather events such as droughts and heatwaves, and to disasters of nature such as floods; and there will be a growing health burden from increases in malnutrition and infectious diseases.

The fear expressed in climate security literature is that intra-state pressures and instabilities over various kinds of environmental scarcities will be internationalised in various ways and therefore make more challenging, the security problems of 'the North' through a geography that moves from borders through regions to the global. The pressures of climate migration, for example (although poorly tested empirically) are assumed to translate into unrest, conflict and perhaps even violence in transit and destination areas. Climate-related resource scarcities have also raised the spectre of more conventional border or territorial disputes between states or adjacent communities. New geopolitical tensions are anticipated as countries' vulnerabilities to resource scarcities, including energy and food, increase or decrease in both comparative and absolute terms. Climate security commentators also worry about 'spill-over' effects if local disputes 'threaten the political stability of countries and regions'[24] and, in turn, the security interests of the more 'stable' parts of the world such as North America, Europe and Australasia.

[21] Thomas F. Homer-Dixon 'On the threshold: environmental changes as causes of acute conflict', *International Security*, Vol. 16, No. 2 (1991), p. 9.
[22] Norman Myers, 'Environment and security', *Foreign Policy*, No. 74 (1989), p. 24.
[23] 'Strategic Policy Issues', *Strategic Survey*, Vol. 107, No. 1 (2007), p. 68.
[24] HREC, *Climate change and international security*, S113/08, 14 March 2008, p. 4.

Concerns are raised that 'under conditions of severe global climate change, environmental factors may push already failed states deeper into the abyss of ungovernability, while driving other states toward the brink'.[25] In extreme cases, climate-related state failures are feared to provide an avenue for extremist ideologies and create breeding grounds and safe havens for terrorist networks.[26] The multilateral system is also deemed to be 'at risk' if governments are unable to or fail to address these threats.[27] Finally, in a replication of the concerns that are at the heart of realist security debates, observers worry that the divergent regional effects of climate change could affect both global and regional distributions of power with unpredictable consequences for international security.

Climate Security and the Asia-Pacific

Conflict and instability is thought more likely in conditions where people face a contraction of livelihood choices, and where governments face increased demands on critical social infrastructure such as health systems, the overstretch of societies' adaptive capacities, and the growth of a politics of resentment in situations of ecological marginalisation where unequal access to resources is politicised or where resource scarcities feed into existing tensions between ethnic, religious or other identity groups. Many countries in the Asia-Pacific fit this 'profile' and are thus assumed to be more vulnerable to internal conflict and unrest sparked by the environmental, economic and social impacts of climate change.

In a detailed report, the non-governmental organisation, International Alert (IA), identified 46 countries – home to 2.7 billion people – in which it anticipates that 'the effects of climate change interacting with economic, social and political problems will create a high risk of violent conflict'.[28] In the Asia-Pacific, Burma, Indonesia and the Philippines are the three countries identified as most likely to fall into this category. Other analyses have likewise suggested that Indonesia and the Philippines are countries in which unsustainable resource use, mismanagement, and environmental degradation, as well as the more direct impacts of climate change, could drive instability and insurgency 'on a par with ethnic and religious issues'.[29] IA has characterised another 56 countries – home to 1.2 billion people worldwide – in which 'the institutions of government will have great difficulty taking the strain of climate change on top of all their other current challenges'.[30] While IA suggests

[25] International Institute for Strategic Studies, Strategic Survey, p. 55; Kurt M Campbell et al, *The age of consequences: the foreign policy and national security implications of global climate change*, p. 107.
[26] CNA Corporation, *National security and the threat of climate change*, The CNA Corporation, 2007, p. 31.
[27] See, for example, HREC, *Climate change and international security*, p. 5. Kurt M Campbell et al, *The age of consequences: the foreign policy and national security implications of global climate change*, Centre for Strategic and International Studies/Centre for a New American Security, 2007, p. 107.
[28] Jan Smith and Janani Vivekananda, *A climate of conflict: the links between climate change, peace and war*, International Alert, 2007, p. 3.
[29] See the executive summary of the conference 'Environment and Security in the Asia-Pacific 2002' organised by the Asia-Pacific Center for Security Studies, 19–21 November, 2002. Online. Available HTTP: <http://www.apcss.org/core/Conference/CR_ES/021119-21ES.htm>.
[30] Jan Smith and Janani Vivekananda, *A climate of conflict: the links between climate change, peace and war*, International Alert, 2007, p. 3.

that the 'risk of armed conflict may not be so immediate' in these countries, they also argue that 'the interaction of climate change and other factors creates a high risk of political instability, with potential violent conflict a distinct risk in the longer term'.[31] IA includes the Asia-Pacific countries of Cambodia, Laos, North Korea, Thailand and Timor-Leste in this category.

Despite efforts at offering an empirical grounding for these kinds of claims, notable differences of opinion remain. For example, IA does not include China in its list of climate-conflict vulnerable countries. The UK MoD, on the other hand, has suggested that 'changing patterns of land use, the failure to deliver per capita prosperity and environmental stresses caused by climate change and pollution, could reduce China's traditional resilience to natural disaster'. The authors of the MoD *2007 Strategic Trends* anticipate that '[a] future large-scale disaster might therefore cause China's progress towards strategic power status to stall and might even result in it becoming a failed state, prone to civil conflict and separatism'.[32]

Climate security analysts have also worried about the potential for climate change to increase the likelihood of state failure in the Asia-Pacific if governments are unable to respond effectively to the social and economic challenges of climate change or the kinds of civil unrest and communal violence that might result. In this view, the impacts of climate change will create demands for resources, food, water, health infrastructure, and social and economic assistance that may be difficult for governments to meet, potentially undermining confidence in those governments and calling their authority and perhaps even legitimacy into question.

In a region that is reported to have an already higher-than-average number of internal armed conflicts and struggles of various kinds,[33] the multiplier effect of climate-induced resource scarcities and stresses should not be discounted. The Asia-Pacific has already seen localised tensions over other kinds of resource and environmental issues although few of these have resulted in the kind of instability and fragility that the more alarmist versions of the climate conflict models might anticipate. The UN Economic and Social Commission for Asia and the Pacific (UNESCAP) reports that large-scale electricity generation projects have become a source of social conflict in countries such as China and Thailand (though this is often directed against governments or corporations rather than other communities).[34] Problems of environmental degradation and pollution have resulted in unrest in China where these issues are made more complicated by disputes

[31] Ibid.
[32] *Global Strategic Trends 2007-2036*, 3rd edition, Ministry of Defence, Development Concepts and Doctrine Centre, 2007, p. 80.
[33] Benjamin Reilly, 'Internal conflict and regional security in the Asia Pacific', *Pacifica Review*, Vol. 14, No. 1 (2002) p. 8.
[34] United Nations Economic and Social Commission for Asia and the Pacific, *State of the Environment in Asia and the Pacific, 2005*, ESCAP, 2006, p. 52.

over land tenure and rural poverty.[35] Concerns about food security – influenced by both prices and availability – have resulted in social protests across the region including in Indonesia, the Philippines and China. Each of these challenges – energy management, pollution and food security – is also a human security issue. Yet, as noted above, the impact of climate change on human insecurity is rarely made a priority in climate security literature.

Climate Change from a Human Security Perspective

In the August 2009 speech referred to earlier in this paper, Secretary-General Ban also drew attention to the catastrophic impact that climate change could have for humanity, a statement that places people at the centre of the climate security debate. The genesis of the human security approach lies in ideas articulated initially by the United Nations Development Programme (UNDP) but with a genealogy that can be traced at least to the two reports of the Brandt Commission, *North–South: A Programme for Survival* published in 1980 and *Common Crisis* published in 1983. The UNDP presented human security as a universal, people-centred concern with 'human life and dignity' and as an antidote to conventional views of security that had 'for too long … been shaped by the potential for conflict between states … [and] equated with … threats to a country's borders'.[36] While environmental degradation was not the only component of human security, the report nevertheless identified the 'basic question of human survival on an environmentally fragile planet' as a central concern. This theme was also picked up by the Commission on Global Governance in its argument that 'threats to the earth's life support systems … challenge the security of people far more than the threat of external aggression'.[37]

The state-centric (and, for some, adversarial model of security) against which human security was to be the antidote was deemed to be flawed on a number of grounds. First, it ran the risk of militarising non-traditional insecurities, drawing attention away from the underlying causes. Second, it overlooked the extent to which various forms of non-traditional insecurities – such as environmental degradation – might be amenable to cooperation rather than conflict. Third, it restricted who was able to contribute to the security discourse and precluded ideas and concepts that did not have states as the key structures or agents. Thus traditional security models were thought not only inappropriate as a basis for dealing with non-traditional and human security threats, such as those involved with environmental degradation and climate change, but as standing in the way of creative and successful solutions. As Bilgin puts it, the supposed 'commonsense' of

[35] See Kenneth Lieberthal, 'How domestic forces shape the PRC's grand strategy and international impact' in Ashley J. Tellis and Michael Willis (eds) *Strategic Asia 2007-08: Domestic politics, internal change and grand strategy*, National Bureau of Asian Research, 2007; and Thomas Lum, 'Social Unrest in China', Congressional Research Service, CRS Report for Congress, RL33416, 8 May 2006. Online. Available HTTP: <http://www.fas.org/sgp/crs/row/RL33416.pdf>

[36] United Nations Development Programme, *Human Development Report 1994*, Oxford University Press, 1994, p. 22.

[37] Commission on Global Governance, *Our global neighbourhood*, Oxford University Press, 1995, p. 79.

statism 'forclos[es] alternative nonstatist conceptions of security and the constitution of alternative futures'.[38]

In the Asia-Pacific, climate change will have a fundamental impact on the livelihoods and even survival of millions of people. Of the 10 countries in the world most imperilled by climate change in terms of the *number* of people likely to be affected, six are in this region: China, Vietnam, Indonesia, Japan, Thailand and the Philippines.[39] The IPCC notes that 'projected climate change-related exposures are likely to affect the health status of millions of people, particularly those with low adaptive capacity' through increases in malnutrition, greater frequency of death, injury and disease from heatwaves and other disasters of nature, an increased disease burden including diarrhea, cardio-respiratory illness, and infectious diseases.[40] Climate change will create further economic uncertainties and not just for the region's poorest, although they are likely to be the least resilient and least able to adapt, at least in the short-term. In conditions of economic weakness (the term used by IA), the range of income possibilities is narrowed and the state is also deprived of resources with which to meet people's needs.[41] In Southeast Asia, for example, over 300 million people live on incomes that fall below US$2.00 per day (over 40 per cent of the region's population).[42]

Climate change will almost certainly undermine or slow progress towards the achievement of the Millennium Development Goals, including those on reducing poverty and achieving sustainable development, by the 2015 target deadline.[43] Poverty exacerbates climate insecurities and in a region where subsistence lifestyles constitute a significant proportion of human livelihoods, the poor in rural areas in particular will be disadvantaged and impoverished by climate change, a condition the Asian Development Bank refers to as 'environmental poverty'.[44] Marginal incomes provide little or no safety net against health burdens, food insecurity, flooding and drought, or other impacts of climate change. And

[38] Bilgin, Pinar 'Beyond statism in security studies? Human agency and security in the Middle East' *The Review of International Affairs* Vol. 2, No. 1 (2002), p. 100.
[39] The Economy and Environment Program for Southeast Asia (EEPSEA) reports that climate change is less rapid in Southeast Asia when compared with global averages; see Herminia Francisco et al., *Climate change: impacts, adaptation and policy in Southeast Asia*, EEPSEA 2008, p. 5.
[40] Intergovernmental Panel on Climate Change. *Climate change 2007: impacts, adaptation and vulnerability – contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, Cambridge University Press, 2007, p. 12.
[41] Smith and Vivekananda, *A climate of conflict: the links between climate change, peace and war*, International Alert, 2007, p. 3.
[42] On 2005 figures, about 93 million (18.8 per cent) people in Southeast Asia lived below the $1.25-a-day poverty line, and 221 million (44 per cent) below the $2-a-day poverty line; ADB, *The economics of climate change in Southeast Asia: a regional review*, ADB, 2009, p. 53.
[43] For more, see United Nations Millennium Campaign, *Seal a just deal: the MDG path to a climate change solution*, UNMC (undated); United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP)/ADB, *The Millennium Development Goals: progress in Asia and the Pacific 2007*, UNESCAP, 2007.
[44] See ADB, *Environmental Poverty: New Perspectives and Implications for Sustainable Development in Asia and the Pacific*, ADB, 2007.

those who are economically marginalised are also the least able to pursue adaptive strategies, the least able to buy their way out of the impacts of climate change.

A human security model which takes people (or peoples) as the security referent questions the 'taken for granted' assumptions and analyses in the policy community about climate change, threat and (in)security. Making people and their communities the security referent helps us to think differently about the threat multiplier effect that is at the centre of more orthodox approaches to climate insecurity. A closer, albeit brief look at three of the key concerns in the climate security literature demonstrates some of the practical consequences of this discursive move from state to human security.

Food Insecurity:

Food insecurity refers to both a shortage of food and vulnerability to high food prices which puts staples out of reach of the poorest. It is a product of land degradation and loss of soil fertility caused by deforestation, overuse of chemicals, inefficient irrigation and waterlogging as well as drought and desertification; diversion of food crops into biofuels; market failure reflected in rising food prices and an ineffective and unfair distribution of food; over-capitalisation of the global fishing industry and the over-exploitation of many of the world's fish stocks; and coastal and river pollution from development that destroys breeding grounds. In the more traditional climate security literature, the main concerns are that food insecurity can turn food exporting countries in the region into net food importers, increase their vulnerability to global markets and their reliance on the security of trade routes, heighten poverty, and potentially intensify domestic grievances and social disruptions. Efforts are thus made to identify food security 'hotspots': those countries where not just food shortages but also food conflict is a possibility. In the Asia-Pacific region, those countries include Burma, Cambodia, North Korea, Indonesia, Laos, Mongolia, the Philippines, Thailand, Timor-Leste and Vietnam.[45]

From a human security perspective, possible or actual food scarcity generates concerns for those who will be most affected. The unpredictability of wet and dry seasons is already having an impact on agriculture in parts of Southeast Asia, with harvests being disrupted, rural incomes dropping, and hunger and malnutrition increasing, especially among children. In Northeast Asia, the Chinese government's State Meteorological Administration has calculated that climate change could cause that country's grain harvest to fall by 5 to 10 per cent, with a food shortfall of 100 million metric tons by 2030, a serious problem for people in a country which is already losing farmland to deserts and which has little capacity to increase arable land.[46] A decline in fisheries production, caused by over-fishing, illegal fishing, and by increases in sea-surface temperatures and salinity, will complicate food security for millions of people in the region who rely on fish stocks as their major source of protein. Coupled with a projected decline in crop yields, particularly in key

[45] UNESCAP, *Sustainable agriculture and food security in the Asia Pacific*, UNESCAP, 2009, p. 29.
[46] 'Climate change to strain China food supply by 2030', *Reuters*, 23 August 2007. Online. Available HTTP: <http://www.enn.com/top_stories/article/22194>.

cereal crops, this could result in malnutrition, an increased disease burden, and possible starvation for many of the region's most disadvantaged with an extra 130 million people in the Asia-Pacific anticipated to be at risk of climate change related hunger.

Water Stress:

Most parts of the Asia-Pacific are projected to experience increased water resource stress as a result of climate change. The Consortium of Non-Traditional Security in Asia reports that since 1950, 'water availability per capita has already decreased by 60 per cent in North Asia and by 55 per cent in Southeast Asia'.[47] In the more traditional approach to climate security, vulnerability to water stress and increased drought is anticipated to trigger distributional conflicts and 'fuel existing conflicts over depleting resources, especially where access to those resources is politicised'[48] or where there are limited or weak institutional frameworks for the 'adaptation of water and crisis management systems'.[49] Several countries in the region have a high dependency ratio for renewable water resources (that is, the proportion of their total renewable water resources that originate outside the countries' borders). Trans-boundary river systems are often moderately or highly affected by fragmentation (that is, the river's natural flow is interrupted by dams, inter-basin transfers or other forms of water withdrawal).[50] The MoD anticipates that in the region's trans-boundary river systems, such as the Mekong for example, 'large-scale farmers [will] … benefit at the expense of smaller [farmers], … there will be disruption of fisheries … [and there is] likely to be increased tension over water resources'.[51] Yet these remain controversial claims. Detailed historical studies suggest that interactions over water resources are more likely to result in cooperative rather than conflict outcomes.[52]

From a human security perspective, water (in)security involves more than tension and the possibility of violent competition among competing users (and uses). UNESCAP calculates that up to 650 million people in Asia and the Pacific do not have reliable access to safe water – and this has very real and immediate consequences for human security.[53] Both poor quality water and limited access to water, whether through the overdrafting of water supplies or through drought, can undermine agriculture which accounts for between 70 and 80 per cent of water use in the region, exacerbate food scarcity, and compromise

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[47] 'Water security: issues and challenges in Southeast Asia', *NTS-Alert*, No. 2 (September 2008), p. 3.
[48] HREC, *Climate change and international security*, S113/08, 14 March 2008, p. 3.
[49] German Advisory Council on Global Change (WGBU), *World in transition: climate change as a security risk – Summary for Policy-makers*, WGBU Secretariat, 2007, p. 2.
[50] See United Nations Environment Programme, *Vital water graphics 2008*, UNEP 2008. Online. Available HTTP: <http://www.unep.org/dewa/vitalwater/article95.html>.
[51] 'Strategic Policy Issues', *Strategic Survey*, Vol. 107, No. 1 (2007), p. 63.
[52] See Aaron T. Wolf, 'Shared waters: conflict and cooperation', *Annual Review of Environment and Resources*, Vol. 32 (2007), pp. 241-69.
[53] UNESCAP, *State of the Environment in Asia and the Pacific*, ESCAP, 2006, p. 2. Other reports put the figure higher, closer to 700 million; see The Asia Society, *Asia's next challenge: securing the region's water future*, Asia Society, 2009, p. 7. The Consortium of NTS-Asia reports that since 1950, 'water availability per capita has already decreased by 60 per cent in North Asia and by 55 per cent in Southeast Asia'; 'Water security: issues and challenges in Southeast Asia', *NTS-Alert*, No. 2 (September 2008) p. 3.

sanitation.[54] For many millions of people, and particularly the poor, this has consequences for nutrition, for health and the disease burden and, increasingly, for who lives and who dies.

Climate Migration and Climate Refugees

The potential for large-scale migrations of people – both within countries and across borders – has been described as 'perhaps the most worrisome problem associated with rising temperatures and sea levels … [and one which] could easily trigger major security concerns and spike regional tension.'[55] The Report of the IPCC Working Group II suggests that as well as disruptions of human populations within states and across national borders in the region, sudden sharp spikes in rural to urban migration are likely in some countries with flow-on consequences for shortfalls in food production, rural poverty and urban unrest.[56] The causal chains about climate migration and security have so far 'rarely been substantiated with reliable evidence'.[57] As Preston et al. observe, 'although it is likely that climate change will ultimately force the displacement of some populations within the Asia/Pacific region, considerable uncertainty persists regarding the number of individuals that will be displaced, whether those displacements will drive internal or external migration, the extent to which human adaptation can reduce displacement'.[58] Neither Northeast Asia nor Southeast Asia is among the regions of most concern in terms of the geopolitical challenges of climate-induced migration identified in a 2007 report by the Center for Strategic and International Studies (CSIS).[59] On the other hand, IISS reports that 'the Chinese military expects to have to … face refugee flows from Indonesia and the rest of Southeast Asia'.[60] And the MoD indicated, in its 2007 Strategic Trends analysis, that

[54] The problem for human security comes not just from water scarcity. An increase in precipitation and more frequent floods is likely to result in 'degraded water quality and [an increase in] water-borne infectious diseases such as dermatosis, cardiovascular disease and gastrointestinal disease'; see Wong Poh Poh, 'Climate change in the Asia Pacific region', presentation at the Global Climate Change workshop: building "consilience" between science, security and policy, S. Rajaratnam School of International Studies, Nanyang Technological University, 14 July 2008. Online. Available HTTP: <http://www.rsis.edu.sg/cens/events/pdf/14%20July%20Global%20Climate%20Change/Wong%20Poh%20Poh_Paper%20(ed).pdf>.

[55] Kurt M Campbell et al, *The age of consequences: the foreign policy and national security implications of global climate change*, Centre for Strategic and International Studies/Centre for a New American Security, 2007, p. 8.

[56] Intergovernmental Panel on Climate Change. *Climate change 2007: impacts, adaptation and vulnerability – contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, Cambridge University Press, 2007, p. 488.

[57] Ragnhild Nordås and Nils Petter Gleditsch, 'Climate change and conflict', *Political Geography* Vol. 26 (2007) p. 627.

[58] Benjamin L. Preston et al., *Climate change in the Asia /Pacific region: a consultancy report prepared for the Climate Change and Development Roundtable*, CSIRO Marine and Atmospheric Research, 2006, p. 49.

[59] Kurt M Campbell et al, *The age of consequences: the foreign policy and national security implications of global climate change*, Centre for Strategic and International Studies/Centre for a New American Security, 2007, p. 56.

[60] 'Strategic Policy Issues', *Strategic Survey*, Vol. 107, No. 1 (2007), p. 63.

climate-related population displacement was a distinct possibility in the major East Asian archipelagos.[61]

Traditional security approaches to climate migration focus on pressures on or threat to states through internal displacement and trans-boundary movements of peoples. A human security perspective focuses on the vulnerabilities of those whose homes, livelihoods and lives are at risk from sea-level rises, desertification and loss of arable land, extreme weather events and disasters of nature. According to the Asian Development Bank, about 20 per cent of people in the world who will be affected by coastal flooding by 2100 live in Southeast Asia, particularly Indonesia, Philippines, Thailand, and Viet Nam.[62] The IPCC estimates that a 40 cm sea-level rise by 2080 could affect as many as 21 million people in Southeast Asia and the World Bank reports that up to 11 million people just in Vietnam alone could suffer from the impacts of a 1 metre sea-level rise.[63] But this does not necessarily translate into millions of people on the move. Migration is not the only response strategy to climate change: people may, for example, choose to stay in their communities and seek to adapt to the impacts of climate change, or they may choose to stay, accept the costs of climate change and do nothing.[64] Migration patterns are not always evidence of instability. Adger distinguishes displacement migration (or what we might call 'desperation migration') from circular or seasonal forms of migration (or what we might call 'adaptation migration') which could actually be a component of enhanced stability for communities.[65] In situations where migration is the only option, this can generate other human insecurities, including loss of income, loss of social capital, disruption to traditional coping mechanisms, and increased vulnerability for already marginalised groups including the poor, women and children.

Climate Security Strategies: Adaptation and Social Resilience

These three brief examples offer some insight into the ways in which a human security approach delivers a different understanding of the 'triggers' for climate conflict. It also helps to see environmental scarcity as something more than a material problem. As Webersik reminds us, 'scarcity of resources is …caused by failure of institutions, absence of state trust, economic inequalities, and lack of entitlements to access these resources'.[66] Human security approaches also have something to say about strategies for responding to climate insecurity in ways that will simultaneously enhance human security and reduce the

[61] *Global Strategic Trends 2007-2036*, 3rd edition, Ministry of Defence, Development Concepts and Doctrine Centre, 2007, p. 29.
[62] ADB, *The economics of climate change in Southeast Asia: a regional review*, Manila: ADB, 2009, p. 51.
[63] Cited in Herminia A. Francisco, 'Adaptation to climate change: needs and opportunities in Southeast Asia', *ASEAN Economic Bulletin*, Vol. 25, No. 1 (2008). p. 7.
[64] See, for example, Rafael Reuveny, 'Climate change induced migration and violent conflict', *Political Geography*, Vol. 26 (2007), pp. 656-73.
[65] See W. Neil Adger, 'Social and ecological resilience: are they related?', *Progress in Human Geography*, Vol. 24, No. 3 (2000), pp. 347-64.
[66] Christian Webersik, *Methodological pitfalls in addressing the link between environmental scarcity and violent conflict*, paper presented to Conference on Environmental Resources, Conflict, Co-operation and Governance, University of Bradford, 17–18 May 2000, p. 1.

potential for social violence and conflict. The expectation in more traditional models of climate security is that governments should work cooperatively to avoid the kinds of tensions that might result from intra- and inter-state competition for resources and access to environmental services and from cross-border challenges such as those associated with climate migration. In this more traditional approach, governments are also encouraged to prepare themselves for demands on their defence forces to protect borders against refugees, to protect strategic assets and supply lines, or to assist in cases of climate-related humanitarian crises or civil unrest. Certainly cooperative and multilateral approaches to climate change are essential – and preferable to the deployment of military capability. This focus on risk – the *probability* that a location will be affected by problems such as climate change – usually engenders efforts to mitigate or constrain the phenomenon that has the potential to cause harm.[67] Commitments to reduce greenhouse gas emissions have been central to international political debate on climate change. But from both a human and traditional security perspective, it is now too late to rely on these mitigation strategies alone.

Reducing the potential for tension, conflict and social violence requires that a human security focus on vulnerability takes precedence over the traditional security focus on risk. Vulnerability encompasses 'the exposure of groups of people or individuals to stress as a result of the impacts of environmental change'.[68] From a traditional security perspective, it is those stresses that are the source of insecurity and help to define climate conflict 'hot spots'. From a human security perspective, those stresses are the result of insecurity. The complement to vulnerability, as Webersik points out, is social resilience and the 'capacity to adapt'.[69] This involves bolstering societies against threats,[70] and enhancing 'the ability of groups or communities to cope with stresses and disturbances as a result of social, political and environmental change'.[71] In effect, climate security needs to be 'human securitised'. Michael Clarke describes this as a move from geopolitics to biopolitics in which human and social resilience 'is a key building block to more sustainable [and secure] twenty-first century states'.[72]

Based on this human security approach, climate security should include the kinds of strategies that have the potential to increase individual adaptive capacity, build social resilience and save lives. Adaptation to the impacts of climate change can take a variety of forms – technological, behavioural, managerial and regulatory.[73] Adaptation efforts that support those who are most vulnerable to the social and economic consequences of

[67] See Susan E. Clark and Erica Chenoweth, 'The politics of vulnerability: constructing local performance regimes for homeland security', *Review of Policy Research*, Vol. 23, No. 1 (2006) p. 96.
[68] W. Neil Adger, 'Social and ecological resilience: are they related?', *Progress in Human Geography*, Vol. 24, No. 3 (2000), p. 348.
[69] Christian Webersik, *Methodological pitfalls in addressing the link between environmental scarcity and violent conflict*, paper presented to Conference on Environmental Resources, Conflict, Co-operation and Governance, University of Bradford, 17-18 May 2000, p.2.
[70] Michael Clarke, 'Introduction', *Conflict, Security and Development*, Vol. 7, No. 1 (2007), p. 1.
[71] Adger, 'Social and ecological resilience', p. 347.
[72] Michael Clarke, 'Introduction', *Conflict, Security and Development*, Vol. 7, No. 1 (2007), p. 1.
[73] IPCC, *Summary for policy-makers: Contribution of working group II*, p. 19.

climate change can help to reduce human and societal vulnerability and increase resilience. More resilient societies are also those in which structures are in place to manage competition for resources and the displacement of people and this, in turn, can reduce the risk of unrest and social violence. In this way, adaptation and social resilience also serve the interests of the traditional security community in mitigating and managing conflict.

Adaptation alone, however, does not guarantee social and community resilience particularly if it relies on 'top-down' decision-making and technocratic responses. Focusing only on the macro-level 'runs the risk of ignoring the concerns of the most vulnerable people'.[74] This presents a number of challenges for traditional security discourse and the community of practice as they address the security impacts of climate change. Climate security strategies for building social resilience need to be people-centred not just people-oriented. They need to be engaged with and responsive to the vulnerabilities and security needs of local communities. Traditional security, on the other hand, functions primarily at the level of the state and the international. Social resilience requires adaptation strategies and institutions that are inclusive and transparent.[75] Security policy, particularly when this is synonymous with defence policy, is traditionally closed and non-participatory. Social resilience and human security approaches also need to involve actors who are not usually included in either the development or the delivery of more traditional modes of security – non-governmental organisations, civil society, local governments, development agencies and a range of other regional and international organisations. Yet these challenges need to be addressed and overcomed, if people, communities, societies and states are to be more secure and more resilient in the face of climate change.

[74] Global Leadership for Climate Action, *Facilitating an international agreement*, p. 22.
[75] See Global Leadership for Climate Action, *Facilitating an international agreement*, GLCA, 2009, p. 22; Jan Smith and Janani Vivekananda, *A climate of conflict: the links between climate change, peace and war*, International Alert, 2007.