OxfordResearchGroup
building bridges for global security

June 2012

CLIMATE CHANGE:
Drivers of Insecurity and the Global South

Hannah Brock

Hannah Brock is a former Project Officer for the *Sustainable Security and the Global South Project* at Oxford Research Group.

CLIMATE CHANGE: Drivers of Insecurity and the Global South

The current security paradigm adopted by most governments and their defence forces is based on the premise that insecurity can be controlled through military force or containment, thus maintaining the status quo. This has been termed the 'control paradigm', and, while being a potentially attractive short-term strategy, it is ultimately 'self-defeating in the long-term' (Abbott et al, 2006). Oxford Research Group argues that a new way of approaching security is needed, one that addresses the drivers of conflict: 'curing the disease' rather than 'fighting the symptoms'.

One alternative is the concept of 'sustainable security'. The approach is inherently preventive (where the 'control paradigm' is fundamentally reactive), in that it addresses the likely causes of conflict and instability well before their effects are felt.

Oxford Research Group aims to encourage in-depth, original thinking amongst decision-makers and civil society around sustainable responses to long-term trends in global security that are likely to cause unprecedented international tension and loss of life in the coming decades. Perhaps the four most important of these underlying drivers of insecurity are climate change, increasing competition over resources, global militarisation and the phenomenon of marginalisation across much of the 'majority world'.[1] The sustainable security framework also aims to highlight the interconnected nature of these triggers of insecurity.[2]

This is the third in a series of four papers[3], each of which examines one of these four issues, and the ways in which each trend (in this case, climate change) may engender local and international discord.

Each paper is the result of long-term collaboration between ORG and partners across the 'Global South'.[4] This collaborative network – made up of activists, analysts and academics from a range of think tanks, civil society organisation and research institutes – have recommended background reading, provided expert review and written illuminating case studies commissioned for this paper, focusing particularly on Bangladesh.

The Importance of North-South Engagement

These likely future drivers of insecurity do not respect national boundaries, and will not be sustainably addressed by unilateral approaches. For example, as competition over energy resources increases with depleting supplies of fossil fuels, it will become more vital that positive collaboration between consumer nations in the West and resource-rich nations in the South occurs.[5]

In a globalised world in which no nation's security is independent of their region or of the wider international community, the opinions of the majority world can no longer be neglected by the major powers who seek to direct global security priorities.

---

[1] A note on terminology: 'Majority world' refers to the majority of the world's population living in poorer nations. It also relates to the 'Global South', which denotes countries in sub-Saharan Africa, Latin America and the Caribbean, Asia and Australasia, and the Middle East and North Africa (with some exceptions that are included in the consultations, given their membership of poorer regional communities e.g. New Zealand, Japan). The 'Global North' relates to countries of Europe, North America and parts of Oceania; and the term is used interchangeably in public discourse with 'the West'.

[2] The concept of Sustainable Security and the four drivers of insecurity were laid out in our book, '*Beyond Terror: The Truth About the Real Threats to Our World*' by Chris Abbott, Paul Rogers and John Sloboda, April 2007 (Rider).' For more information on our Sustainable Security programme, please visit the *Sustainable Security* programme section on the Oxford Research Group website.

[3] Each paper is published on the '*Sustainable Security and the Global South*' project pages at www.oxfordresearchgroup.org.uk and also on our Sustainable Security blog www.sustainablesecurity.org.

[4] This series of papers follows a sequence of reports published between 2008 – 2010, which details the result of four regional security consultations that examined specific drivers of insecurity in regions of the Global South (one each covering Latin America and the Caribbean, Sub-Saharan Africa, Middle East and North Africa and Asia and Australasia). Many of the security experts who attended these consultations have also been active in the development of these research papers. The reports of the consultations are all available for download on the '*Regional Sustainable Security Consultations*' pages of the www.oxfordresearchgroup.org.uk website.

[5] Many 'southern' energy-supplying nations have not had positive relationships with Western powers historically, including Iran, Iraq, Venezuela and Libya.

The sustainable security approach posits global justice and equity as key requirements of any effective response to global insecurity. Voices from the Global South remain on the periphery of discussions around global political and security issues, and particularly at the negotiating tables of international institutions.[6] This must be addressed.

Western organisations can contribute to the building of an egalitarian approach to international relations by adopting a close and meaningful engagement with majority world thinking. Security analysts and policymakers must also continue to engage and collaborate with counterparts in the Global South, ensuring that the sustainable security project puts into practice the idea of a truly inclusive global politics.

Many future security problems, and also the solutions, will be found in the Global South (given their intimate and intuitive understanding of those problem and solutions), within the very populations whose marginalisation has resulted in much contemporary insecurity. Whilst climate change, for example, will hit the poorest communities hardest[7], it is with emerging economies like China, India and Brazil that the West must engage if mitigating climate chaos is to have any success at all. Non-Western perspectives must be recognised and addressed in concrete policies in the powerful countries of the Global North. Such policies should be focused on transforming tensions at their root rather than solely attempting to control violent conflicts.

Our hope is that this series of research papers will contribute towards 'North-South' communication, giving Western decision-makers greater reasons and resources with which to engage with their colleagues in the majority world to build a genuinely sustainable global system.

The Pressing Threats to Global Security in the Twenty First Century: A Changing Climate

The issue of global climate change has become prominent over recent decades, growing to be seen by many in the environmental movement as a problem of apocalyptic proportions (Lean, 2005). Whilst the issue was first articulated by 'green' campaigners, gradually the socioeconomic, as well as ecological, implications of global warming are coming to the fore and being picked up by other interest groups. Many development analysts are convinced of the potentially catastrophic effects on those already living with restricted resources (as Bangladeshi activist Nazmul Chowdhury put it, 'forget making poverty history, climate change will make poverty permanent' [Clifford, 2007]). Human rights and refugee specialists are increasingly occupied with the task of mitigating the human welfare problems around likely climate change induced displacement. Private sector and industry groups are now accepting the need to 'mainstream' climate change – and perhaps regard it both as a threat, and an opportunity for development.

Furthermore, over the last five years or so[8], the security policy community have come to regard climate change as part of their brief, as have civil society groups that work on defence, conflict analysis and peace-building. Whilst this paper is offered in the hope that the Western defence community may engage with some perspectives from the Global South, it is also to be hoped that as these actors become increasingly involved in issues related to environmental limitations, this knowledge leads them to act as advocates for climate change mitigation – as well as adaptation.

The "securitisation" of climate change – treating the issue as a matter of local, national or global security – need not mean an automatic "militarisation" of the issue - the adoption of military responses based on the

---

[6] This has already been subject to much debate. For example, the Global Governance Group (3G) – an informal group of small and medium sized non-G-20 member states – recently came together to assert the need for 'more effective global governance mechanisms' that recognise the impact of G-20 decisions outside of G-20 countries, and engage all nations in decision-making on issues of global concern (Ambassador Vanu Gopala Menon, 2010).

[7] The UK's Stern Review recognises that 'Climate change is a grave threat to the developing world and a major obstacle to continued poverty reduction across its many dimensions (...) developing regions are at a geographic disadvantage: They are already warmer, on average, than developed regions, and they also suffer from high rainfall variability (...). Second, developing countries - in particular the poorest - are heavily dependent on agriculture, the most climate-sensitive of all economic sectors, and suffer from inadequate health provision and low-quality public services. Third, their low incomes and vulnerabilities make adaptation to climate change particularly difficult' (2006: vi).

[8] For example in the UK, the Ministry of Defence's Development Concepts and Doctrines Centre 'Global Strategic Trends' programme, and the focus on climate change from the Foreign and Commonwealth Office (including though the appointment of a Special Representative for Climate Change in 2006); and in the US, the release of CNA's landmark report from their Military Advisory Board, 'National Security and the Threat of Climate Change' (2007).

threat or use of force to a changing climate. Such an overly pessimistic view ignores the potential we still have for preventing the most dramatic effects of climate change, and may decrease the chances of us embracing a more preventative approach, promoting a low-carbon transition (Rogers, 2010).

Climate change is a complex phenomenon, which will have multiple and non-linear effects on human security. It will have both direct and indirect impacts on the stability and security of states and communities, and these will vary enormously across the globe. However, it is the states and people of the Global South that are the most vulnerable to the security implications of a warmer world that are described below. The following case study, focusing on Bangladesh, is an example of this.

CLIMATE CHANGE: Drivers of Insecurity and the Global South

Climate Change and Conflict: The Case of Bangladesh

Bangladesh is a 'frontline state' of climate change, predicted to be one of the first and the hardest hit countries to face the adverse impacts of warmer global temperatures. This is particularly due to its unique geographic location, dominance of floodplains, low elevation from the sea, high population density, high levels of poverty, and overwhelming dependence on nature, its resources and services. The country has a history of extreme climatic events claiming millions of lives and destroying past development gains. The impacts of the changing climate are eroding the assets, investments and futures of families, communities and the state at large. As a result, the number of internally displaced people is increasing alarming, which jeopardises social and political stability. For this reason, though Bangladesh is not directly facing any conflict resulting from climate change now, there is a general consensus that the impact of climate change has significant potential to lead to political instability and violent conflict at various levels of the society and state.

The country inherits a poor and institutionally weak regime and is therefore unlikely to respond to such crisis in a manner that is satisfying to all. Social effects related to the consequences of climate change, scarcity of resources and natural disasters could play an important role in giving rise to various conflicts. **Social tensions, including those emerging from climate-related degradation, are likely to manifest themselves through anti-government movements.**

The unabated impacts of climate change also have the potential to lead to economic instability in Bangladesh, which can also lead to violent conflict. Certain impacts of climate change e.g. food insecurity, freshwater crises and soil degradation are affecting the livelihood patterns of marginalised people directly. This results in deepening poverty at the individual as well as the national level. Moreover, the lack of economic growth reduces popular support for the government.

The political and economic instability resulting from the impacts of climate change can lead to destabilisation and conflict in Bangladesh in a number of ways. These include the breakdown of social harmony and cohesion, increasing competition over scarce resources, a collapse of traditional leadership structures and increasing stress on the political leadership structures of the state. **In this way, climate change acts as a threat multiplier, causing widespread instability in socio-political settings that may deepen existing social and political tensions and at times leads to new ones**. It also opens up the opportunity for non-state actors to intervene and exploit the situation, further undermining the security and stability of the state. Loss of livelihoods and the resultant deepening of poverty can also serve as a recruiting ground for extremist groups in Bangladesh, resulting in a higher conflict risk. The consequences of climate change are likely to generate large scale migration, which can potentially lead to various sorts of conflicts including group vs. group conflict (for example between Bengali and the tribal people in the Chittagong Hill Tracts), state vs. group conflict and state vs. state conflict (between India and Bangladesh). Impacts of global warming and climate change thus have the potential to challenge the development efforts, human security and the future of the country.

By Obayedul Hoque Patwary, Department of Peace and Conflict Studies of Dhaka University, Bangladesh

Direct Impacts

Areas Rendered Uninhabitable

Sea level rises and desertification are two processes for which climate change is a catalyst. Both are likely to affect regions that have not been heavy contributors to green house gas emission levels; both are processes that will make some hitherto inhabited areas unfit for human habitation.

The melting of glaciers is causing sea levels to rise (IPCC, 2007). In Africa, this process could threaten more than 25% of the continent's population, who live within 100 kilometres of the coast (Juma, 2010). Sea level rise will also have a dramatic affect on island states, nations with floodplains, and low-lying coastlines. Many Pacific islands may even disappear completely (Honig 2011).

In the Caribbean, sea level rise is a huge concern, endangering the future of small islands, and in the shorter term affecting their trade and tourism capabilities. The regional integration system (CARICOM – the 'Caribbean Community') has a task force dedicated to this issue (see Simpson et al, 2010).

Desertification is likely to affect the Arab world significantly (Shanin, 2009), along with southern Africa, southern Europe, central and east Asia (Rogers, 2009 and UNCCD, 2007). Desertification has also been a driving factor in the recent conflict in Darfur (Gambari, 2011), as desertification and drought result in increased water insecurity and arable land, there have been clashes between African farmers and Arab pastoralists, likely to spread as these nomadic herders are pushed into other territories by drought. Desertification will also affect the Latin American and Caribbean region where desertification, along with increasing incidences of natural disasters including hurricanes, is likely to reduce GDP in the coming decades by around 1% per year for the next ten years (ECLAC, 2009). Desertification will also occur in more developed nations, including the United States (Rogers, 2009).

These forces may force people to move, either temporarily or permanently. Migration both in and across countries is likely [see 'The movement of peoples' section, below].

CLIMATE CHANGE: *Drivers of Insecurity and the Global South*

Bangladesh: Vulnerability, Gender and Migration

Environmental transformation has affected some countries in Asia and Africa in ways that have had disproportionately adverse impacts on women. Internal forced migration caused by climate change is a major concern in some disaster prone developing countries. Migration is not gender neutral – women are more likely to move from one place to another; and migrants are often treated harshly as they are exposed to violence according to their caste, creed or ethnicity.

The relationship between environmental crisis, migration and gender are not linear, but intertwined. Environmental crises induce forced migration both within and across countries which leads to human insecurities of displaced people through undermining livelihoods, increasing conflicts over resources (such as access to viable land, food, and potable water) and galvanizing other concomitant challenges. With widespread population movement, women suffer more than men as it is more difficult for the former to ensure access to credit and secure livelihoods during and after the disaster. Often, the influx of out-flow migration results in sexual violence and harassment against women in the transition and destination areas (Dalrymple et al, 2009).

To look at the linkages between climate change and human insecurity, in 2009 the Bangladesh Institute of International and Strategic Studies, in collaboration with Saferworld, conducted a study of the vulnerabilities of women in Khulna-Satkhira (states in the southern part of Bangladesh). The rationale of selecting Bangladesh as a case study was that the country has ranked one of the most vulnerable to floods, third most to tsunamis and sixth most to cyclones. In particular, the Khulna and Satkhira districts are the most flood and cyclone prone areas among the 64 districts.

The research found that the nexus between climate change and human insecurity is not direct, but dependent on a series of factors including gender. For instance, immediately after natural disasters (like cyclone Sidr), people struggled to access food, shelter, clean water as well as suffering from numerous diseases such as diarrhea, cholera and typhoid. Since women are more likely to be responsible for providing the family with water and food, they are both more affected by these problems, and more hard hit when disease strikes.

Moreover, a large number of women were involved in shrimp cultivation. When extensive river floods washed everything away, women lost their jobs, which increased livelihood insecurity.

The impact of natural disasters in Bangladesh has not only reduced the capacity of women to secure their jobs (as the degradation of the land reduces the work available in farming) but also increased the number of sexual assaults against women in some areas. It was revealed that male shrimp workers generally come from outside the local area, and are perceived as the main reason for the rise in sexual violence. **Whether or not this is accurate, such suspicions lead to increased tensions between settled communities and the incoming workers**.

Sexual assaults against women had far reaching impacts on individuals, families and local communities. Thus, the study found that climate change, and resulting migration, is a significant contributing factor to increase conflicts and violence in the society.

By Razia Sultana, Bangladesh Institute of International and Strategic Studies

Extreme Weather Events

Climate change is likely to increase the frequency and ferocity or extreme weather events – also known as 'climate shocks'. Whilst droughts and flooding are already regular patterns in many areas, and have been for many hundreds of years, climate change will mean these happen more often, and with greater intensity. For example in Pakistan, areas with a history of 'high frequency, low intensity flood events' are now experiencing 'high intensity, high frequency floods' such as those in 2010 and 2011, and humid regions have seen a rise in monsoon rainfall of between 18 and 32% (Jena, 2010). In northern Kenya, although droughts are nothing new, they are increasingly concentrated: for example in 2010, the River Bisanadi (a tributary of the major River Tana) had dried up, for the first time in living memory (Abdi, 2011).

This unpredictable climate has multiple affects: on food and water security, on transport, energy infrastructure, on the economy, education and health systems, on the ability of communities to adopt long-term adaptation techniques and ultimately on whether areas remain habitable.

Vulnerable communities face a more dangerous and insecure world. According to the Bangladeshi Ministry of Environment and Forests, between 1991 and 2000, 93 major disasters were recorded in Bangladesh, resulting in nearly 200,000 deaths and causing US $5.9 billion in damages with high losses in agriculture and infrastructure (Patwary, 2011). In short, governments and communities are often still recovering from one natural disaster when another one occurs.

Competition Over Resources

In some areas, climate change will mean greater competition over natural resources; this competition has the potential to increase violent conflict.[9] Processes around the procurement of basic necessities - water, energy and food – are likely to become characterised by struggles for use and control of resources that are determined by existing power relations. Where households and communities are wealthy, access to basic provisions will be a manageable issue; for poorer and less powerful groups, this will not be the case. Marginalisation and poverty will play an even greater role in determining survival, with tension around natural resources grown/found in poorer areas, but bought/accessed only by those that can afford them.[10] This visible disparity may increase the risk of violent conflict between these groups.

Access to water, in particular, will be a major issue as climate change will result in there being less fresh water available in many areas. In countries such as Pakistan, where 'economy, social fabric and politics are directly linked with irrigated agriculture' and water resources are 'at the heart of most (…) conflicts' (Memon, 2009), river flows may be severely curbed, provoking conflicts both within Pakistan and with neighbouring India (Jena, 2010). India is likely to develop dams along the upper reaches of the Indus river in order to feed its reservoirs – raising questions in Pakistan over whether falling water availability is 'due to climate change or to India's reservoirs' (ibid.). Many of the rivers flowing through Pakistan (such as

---

[9] See '*Competition Over Resources: Drivers of Insecurity and the Global South*' paper in this series.
[10] NB. This may not be the case in natural disasters affecting highly impoverished states, where the richer and poorer in communities suffer together, for example in Haiti. In such cases it is the marginalisation of their states e.g. lack of resources and weak governance, which determines their resilience and survival, not their personal assets (which are more relevant in terms of competition over resources outside of natural disasters).

Chenab and Ravi rivers) have their springs and upper reaches in Indian-controlled territory, giving India greater control over shared river systems. As Pakistan is hampered by a lack of alternative water sources, competition for water access with India may prove destabilising to the brokered stability between these two Asian powers.

Supplies of fresh water will also be affected in some areas. As sea levels rise and impact on inland water supplies (e.g. rivers), the salinity levels of fresh water will be affected, possibly making it undrinkable, and also harder for fish to survive in. This may increase competition over food (Memon, 2008).

Indirect Impacts

Agriculture, Land and Livelihoods

Farming will be severely disrupted by climate change in many areas, with land and soil quality affected by water insecurity (for example through drought, flash flooding and sea level rise) and by temperature change impacting crop selection. For example, a 1m sea level rise in Egypt would affect 6 million people, with 12 to 15% of agricultural land lost; if this change was not managed effectively, food security, as well as GDP, would be adversely affected (Medany, 2008).

A diversification in income may seem a sensible solution to those reliant on traditional and environmentally bound livelihoods, but some of these alternatives will foster greater insecurity. For example, in northern Kenya, where pastoralist livelihoods are threatened, young men can be drawn into armed cattle-rustling gangs. Moreover, where communities feel that external security provision is not in place, they may take up arms themselves, leading to a cycle of increasing militarisation and escalation of armed violence (Campbell, 2010).

Some alternative livelihoods may also be made less viable by climate change. Tourist industries will be hit in some areas, as the particular climate of tourist destinations change over time, some destinations even become submerged by sea level rise, or rendered more vulnerable to climate shocks. The needs of non-basic infrastructure, such as tourism, may also produce tension amongst communities. Tourism already diverts water from agriculture, which can deepen food insecurity, and, whilst it does provide employment for local people, it primarily serves the interests of powerful international companies and tour operators (Khattabi: 2009, 126).

In light of the difficulties in adapting to climate change, as the habitability of rural areas is affected, mass migration to urban areas may also be a common coping strategy [see 'The movement of peoples' below] (Tacoli, 2011).

High-carbon, industrialised agriculture contributes to climate change. For example, 18% of global greenhouse gas emission stem from livestock production (Pachauri, 2008). Agricultural initiatives that aim to mitigate climate change may also, if not managed sensitively, ironically increase environmental tensions. For example, in Paraguay, soy has become the biggest export – with much of this sold for biofuels (Vargas, 2007). There is evidence that local communities (*campesinos*) in Paraguay have been driven from, or obliged to sell, their land in order for multi-national corporations to cultivate biofuels (ibid.).

In those communities, who have chosen to stay living close to the lands

Small farmers occupy land in Paraguay. Having been evicted from their lands, they occupy private land that is not being used, and risk violent eviction from the landowner or police. *Photo courtesy of Lasc Irlanda.*

they vacated, negative health impacts (because the water supply is contaminated with pesticides, affecting both the people and their livestock) and economic disempowerment (as a result of the loss of their sustained income as small farmers), as well as loss of biodiversity (because of the new monoculture), have been reported (BBC, 2010).

The Guaraní people's land in Paraguay has been taken over by a Brazilian multinational. As one of their leaders put it, "this fight has been going on for three years, but the battle has been going on for a hundred and fifty. Indigenous people are always trying to recapture what they see as belonging to them (...) [the land is] now used to cultivate soya" (ibid.).

Thus, long-term tensions around sovereignty and indigenous rights are heightened, further entrenching the feeling of marginalisation in many communities. This experience of marginalisation can have disastrous personal impacts for individuals. In another Paraguayan community, two members of the agrarian reform land movement, who had campaigned against biofuels, were shot by the police in a struggle over land rights in 2008 (ibid.). Similar confrontations between police and local populations have also happened in other areas where occupying farmers were expelled by force (ibid.).[11]

There have also been occasions of violent reprisals from radical indigenous groups. In 2009, the Paraguayan People's Army, a radical socialist 'guerrilla' group, kidnapped a five-year old relative of one of the country's largest soy producers (Reuters 2009). The child is not the only victim of the group's attacks – they also claimed the murder of Cecilia Cuba, daughter of the former President – but the inclusion of a soy barons' family in their strategy may be a pointer to greater tension between multinationals and local populations in the future.

To avoid the spiralling violence that the combination of marginalisation and food insecurity can bring, it is vital that access to food remains central to debates around land use, particularly in terms of competition with 'cash crops', such as rape, sugar cane, etc. that are sold for biofuels.

The Movement of Peoples

As we have noted, many of the impacts that a changed climate will have on vulnerable regions will make some areas uninhabitable. Sea-level rise, desertification, water and soil salination[12], an increase in droughts, floods and unpredictable rainfall are just some of the processes that are likely to encourage either displacement as a result of an emergency, or migration as a result of longer term changes in the climate. In Africa for example, there is likely to be a ten-fold increase in the number of refugees and internally displaced peoples (IDPs), with the International Organization for Migration predicting that as many as 200 million people around the world will have to move by the middle of this century as climate change amplifies (Juma, 2010). Such displacement will by no means be exclusive to the Global South – some North American communities are already relocating.[13] Precise predictions of significant changes in migration patterns are contested, however, and arguably require deeper research (see Raleigh, et al, 2008).

Much expected climate change displacement will occur within countries, not between them (Warner, 2011). The distinctions between refugees and internally displaced peoples and economic migrants (IDPs) are pronounced in international law. Refugee law, which only deals with cross-border movement, is binding on parties that have ratified the 1951 Refugee Convention, and is based around the principle of non-refoulement.[14] There is no binding international treaty on IDPs, however, the African Union launched a convention in 2009 - The Kampala Convention – which is the first legally binding regional instrument in the world to impose on states the obligation to protect and assist IDPs. The convention provides standards for before and during displacement (preventing displacement and assisting displaced peoples) and seeks durable solutions to bring displacement to an end (AU, 2009).

Discussions are currently being undertaken by stakeholders, including the Office of the United Nations High Commissioner for Refugees, the International Organization for Migration and non-governmental organisations (NGOs), regarding where climate change displacement sits within existing legal frameworks.

---

[11] As well as immediate effects, such as the displacement of farmers, the cultivation of biofuels in some regions will also decrease food security and accelerate deforestation (Altieri and Bravo, 2007), which in turns enhances the risk of flooding and drought.

[12] As a result of sea level rise.

[13] The temperature in Alaska has risen by between 2 and 3.4 degrees Celsius since 1974, wildfire is increasing, and artic sea ice is decreasing. 'Four Alaskan indigenous communities must relocate immediately and dozens of others are at risk; meanwhile, government agencies are struggling to meet the enormous new needs of these communities' (Bronen, 2008.)

[14] Concerning the protection of refugees from being returned to places where their lives or freedoms could be threatened.

Questions that need to be answered include: At what level of vulnerability does the migration of communities shift from a desire for livelihood improvement (pragmatic relocation) to environmental necessity (refugees)? How do the rights of climate change migrants relate to existing legal processes for forced migration e.g. those fleeing political persecution? How will host countries manage immigration? There is a clear need for a set of Guiding Principles that can be referred to in the management of such issues.

The Cancun Adaptation Agreement established at the COP 16 climate talks in Mexico in December 2010, provides guidelines for support for adaptation, and calls on countries to enhance understanding and cooperation on 'climate change-induced displacement, migration and planned relocation' (NEPAD, 2010). States have asked for support in undertaking thinking around preparedness (Warner, 2011); thus the time is ripe for those most likely to be displaced because of climate change to feed into international dialogue on frameworks for climate change migration, in order to ensure they are formulated with the complex needs of those most likely to be displaced fully in mind.

This is an issue first of inclusion and representation, as negotiations that exclude at-risk groups further embed the sense of marginalisation and inequality that have already surrounded environmental summits.[15] Secondly, it is an issue of building trust and security, as without the joint participation of all stakeholders, processes of migration, both within and between countries, could engender frustration, a lack of social cohesion, and civil unrest, as tensions between 'host' and 'migrant' groups erupt and governance mechanisms breakdown.

People move in order to improve the resilience of their households to deal with future climate shocks and stresses, and to move away from areas of intense climate stress. However, if migrants are then in competition for scarce resources in the areas they move to, and this results in conflict with the local population and lower incomes and reduced rights for themselves, then migration may be just the first in a series of adaptive strategies – including moving again (Kartiki, 2010). Conflict over resources in 'host' areas is not inevitable, however, as many migrants 'move locally and rely on social networks or are directed towards relief centres during a crisis' (Raleigh, et al, 2008:35). Equally, recent research has shown that environmental change can cause added problems associated with populations *unable* to move away from locations where they are vulnerable (Foresight 2011).

Finally, displacement that occurs as a result of climate change may drive militarisation along borders. For example, as the Australian government's policies towards asylum seekers becoming increasingly stringent generally (Ryan, 2010), they have begun using the Federal Police to intercept boats carrying asylum seekers (Maley and Maiden, 2010).

Marginalisation vs. Climate Justice?

The worst effects of climate change will fall first and foremost on the majority world (Adow, 2009).[16]

With women being more likely to live in poverty than men, climate change is also not gender blind. Women represent 70% of those people living in poverty, and generally have less access to resources, technology and credit (Gandhi, 2011). In families living in poverty, adaptation to a changed climate will drain money away from other priorities, such as the education of children. As with these families, so in governments, where climate change adaptation measures may force funds to be reallocated from other departments, resulting in a neglect of other programming e.g. gender equality and development work.

Many across the Global South perceive climate change principally as an issue of justice. Former UN Secretary General Kofi Annan has stated that "the countries most vulnerable (...) contribute least to the

---

[15] Some NGOs exist to counter the imbalances of diplomatic summits [see *Marginalisation of the Majority World: Drivers of Insecurity and the Global South* in this series for more details]. Independent Diplomat, which provides independent and confidential advice and assistance in diplomatic technique and strategy (Independent Diplomat, 2011), worked with the Republic of the Marshall Islands and the Alliance of Small Island States through the UN Framework Convention on Climate Change (UNFCCC) and the Cartagena Dialogue for Progressive Action [see '*Mainstreaming Climate Change: a Whole of Government Response*' section of this paper below].
[16] 'A wealthy minority of the world's countries and corporations are the principal cause of climate change; its adverse effects fall first and foremost on the majority that is poor' (Adow, 2009).

global emissions of greenhouse gases. Without action they will pay a high price for the actions of others" (quoted in Patwary, 2011). President Museveni of Uganda went as far as calling climate change 'an act of aggression by the rich against the poor' (Masood, 2007).

The perceived overall failure of the international negotiations, relative progress at the most recent talks in Durban in December 2011 notwithstanding, has contributed in some cases to North-South hostility – even a 'diplomatic freeze' (Patwary, 2011). There is a frustration at developed nations' lack of acknowledgement of their historical legacy. As the chief Bolivian climate change negotiator, Angelica Navarro, put it, "We are not begging for aid; we want developed countries to comply with their obligation and pay their debt" (Democracy Now, 2009). The dissatisfaction at the lack of a world movement to tackle climate change has led some governments and organisations to reject mainstream processes and work through alternative tracks, such as the World People's Conference on Climate Change and the Rights of Mother Earth, held in Cochabamba, Bolivia, in 2010. The 'People's Agreement' composed at this conference placed climate change and environmental damage in a wider context of an aggressive capitalism, exploitative to humans and destructive to the environment. Some environmental activists in the West have also embraced such critiques. The more Southern voices are excluded, the more the image of North versus South risks becoming entrenched.

It is crucial, also, to realise the diversity in the situations of 'Global South states'. As we have seen in this paper, climate change will affect different regions in very different ways, and is already doing so. There can be no 'blueprint' for how nations of the South should be engaged with on this issue, as they have just one thing in common – their situation outside the small groupings of economic and political power. Their union in climate change negotiations is in the name of solidarity, not a request for a unified identity in the eyes of the world.

To give one political example, Latin America has often found itself 'squeezed in the middle' – not sufficiently large (compared to Asia), but insufficiently poor (compared to Africa) – for aid donors to be interested in

Gathering at Cochabamba's World People's Conference on Climate Change and the Rights of Mother Earth. Photo courtesy of [The City Project](#).

(Araya, 2011). It is unlikely therefore that states from Latin America and the Caribbean will be asking exactly the same questions in international negotiations around, for example, adaptation budgets (either as each other, or as other regions of the Global South). That does not mean that some good does not come of this region working with other Global South constituencies however. A positive step forward would be the building of a united front around the need for a more egalitarian basis for negotiations, based on the link between historical legacy, and the current responsibilities of the industrialised nations. When governments are around the table, 'Global South nations' may not all be calling for precisely the same course of action, but the combined will of these nations may ensure that governments are sitting round the table having the discussion based on a greater sense of fairness and equity.

Social and economic deprivation enhanced by climate change may also trigger radicalisation in some quarters. The extra pressure that climate change puts on already fragile states may mean that the government can no longer deliver services to its people. In such cases, civil society groups may fill the vacuum; some of these groups may be militant in their opposition to the state, and their engagement in social service provision can increase sympathy for them (Patwary, 2011). This may further disengage the population from democratic politics (Brock, 2011).

Finally, the groups most vulnerable to climate change are also not necessarily those at the most risk in terms of direct physical impacts. Vulnerability is actually largely 'determined by poverty'; not just income poverty, but a poverty of power, where countries are marginalised from policy debates and therefore from the ability to influence decisions (Tacoli, 2011). Hence, the way environmental change impacts on communities is not automatically and proportionally determined by the degree of environmental change, but via their level of resilience, which in turn is a result of power structures. To put it simply, even if, for

example, Western countries were hit harder by climate change than poorer Southern countries, citizens in the West would still be likely to be less affected due to a far greater capacity to adapt to climate change. For citizens in poorer countries, already a smaller impact could mean life or death. It is non-environmental factors, therefore, which really determine the level to which communities will be affected by climate change.

Minority Rights

While climate change will hit the poorest hardest, it will also affect minority indigenous groups disproportionately, as these groups are often amongst the poorest and have such a close relationship with the environment (Baird, 2008); for example in the Niger Delta, those 'already marginalised by their social status' (Wapmuk, 2010) are the most disadvantaged by environmental degradation, as they are dependent for their immediate survival on ecosystem services and nature related trades e.g. fishing, forestry, farming and hunting.

During India's severe monsoon floods in 2007, three minority groups – Dalits, Adivasis and Muslims – were hit worst. There were many reasons for this. Firstly, many Dalits live in vulnerable homes outside main villages, leaving them particularly exposed. In some cases, relief workers were also not aware of their presence, and in others, dominant groups took control of aid distribution to the disadvantage of these three groups (Baird, 2008). With natural disasters even more likely because of climate change, service provision around aid must be entirely non-discriminatory; and where natural disasters are most likely, government and disaster relief NGOs need comprehensive knowledge about the population they will be called on to support. This is also true of longer-term development and climate change adaptation work. In some parts of northern Kenya, for example, the administration produces policies ill-suited to the pastoralist style of resource-management (Campbell, 2010). Whether this is due to ignorance or discrimination against a minority group, the results will regrettably be the same: adaptation policies unfit and or even damaging for the local community.

In a broader policy sense, minority and indigenous groups must fully participate in efforts to mitigate and adapt to climate change. The Cochabamba Declaration expresses it thus: 'We demand the full and effective implementation of the right to consultation, participation and prior, free and informed consent of indigenous peoples in all negotiation processes, and in the design and implementation of measures related to climate change' (2010).

Impacts on Infrastructure and Health

Even if only some of the predicted effects of a warmer climate materialise, key infrastructure, such as transport systems, energy supplies and communications will be put under stress, particularly in the Global South. Many of the world's cities are located on coasts and river deltas. There is a clear threat that with rising sea levels and extreme weather events, key infrastructure in these cities and ports will be damaged or destroyed, along with human life and property. The ability to cope with damaged infrastructure is obviously dependent on economic capacity, with less stable and economically buoyant states less able to absorb these stresses. A good example is Colombia, where the extensive coastlines and economic dependence on river systems will likely result in, increases in large-scale migration, and humanitarian and economic crises creating a greater need for international emergency responses. These, in turn, may drive people further into 'alternative' and illicit incomes streams such as the drugs trade and human trafficking (Ramirez and Butts, 2011). The Colombian government is already under strain due to on-going armed conflict. It is unlikely that it will be able to satisfy these growing demands on its capacity without assistance. If this is not forthcoming, then the state will become increasingly fragile.

The impacts of climate change on water supplies, agriculture, and fishing and livestock will result in increased food insecurity, causing malnutrition and other health problems. Shifts in disease patterns are also predicted. For example, mosquitoes, which transmit both malaria and dengue fever, will be able to survive in new areas as climate change results in increased rainfall and higher temperature providing more breeding pools, but with the potential for increased rainfall in other areas actually flushing out breeding sites, thus reducing the mosquito population (Tren, 2002). The relationship between climatic changes and diseases such as malaria is complex, with the exact consequences not being entirely predictable (ibid.); this makes planning more difficult, and in fact makes the problems potentially more severe, as not all scenarios can be effectively planned for. Where changes are expected, contingency planning will place stress on already stretched economies, for example in building pressure on health infrastructure as they

provide new and expanded provision e.g. inoculations and preventative health measures such as mosquito nets.

Addressing the Security Implications of Climate Change

Public Education

Internationally, public understandings of climate change – the reasons behind it, the likely results, and methods of mitigation and adaptation – need to improve. Current levels of knowledge are very low in some areas. This hampers both the response of citizens – which is ultimately what creates the momentum for serious change - who lack 'relevant, useful information' (Africa Talks Climate, 2010), and decision makers, who can lack sufficient 'environmental literacy' (Memon, 2008) to back long-term, sustainable policy changes.

However, it must also be remembered that where formal scientific knowledge at a local level may be low, personal understandings of the effects of the changing weather may be well known. Though people may not label it 'climate change', a newly unpredictable weather pattern is often already an issue of real concern for them (Africa Talks Climate, 2010). Moreover, though climate change may be recognised as a threat, people may not be aware of the potential magnitude of the risk and the likelihood of the even more volatile future (Wapmuk, 2009: 2).

Public education programmes need adequate funding, in order to prepare populations, and mitigate the likelihood of unplanned reactions to environmental and social changes. Ultimately, kneejerk reactions to the issues described above increase the likelihood of instability and conflict unless adequate management systems are in place. Education will also give people greater capacity to be involved in participatory adaption strategies, becoming the 'subject, not the object' of development and climate change initiatives (El Hassan Bin Talal, 2010). Particular efforts should be made to include vulnerable and excluded groups in decision-making processes to minimise social and political tensions. Explicitly addressing unequal power relations – for example by focusing on gender equality and human rights – and promoting fair access to resources and services, should underpin all adaptation strategies (Wijeyaratne, 2009), thus also improving security.

Regional Forums

In a 2008-2010 series of consultations undertaken by Oxford Research Group with non-Western security analysts, effective regional architectures were identified as significant in addressing shared security challenges, such as climate change (Brock, 2011). In Asia and Australasia, strong regional groupings would give space for the formulation of negotiated settlements to pre-existing disputes, and to agree pan-regional responses to the problem of environmental refugees. Similarly, Middle East and North African states would profit from regional institutions that include all key players, as dialogue around climate-induced resource scarcity is desperately needed. It was suggested in this consultation that the Arab League must engage closely with Israel, Iran and Turkey (ibid.).

In other regions, the Organisation of American States (OAS) works together closely, as does CARICOM (the 'Caribbean Community'). The OAS issued the 'Santo Domingo declaration' in November 2010 calling for 'deep cuts in emissions of greenhouse gases' (OAS, 2010:4) and citing the use of Inter-American networks established through the OAS to 'promote cooperation, and the exchange of experiences with respect to integrated water resources management, renewable energy, biodiversity information, disaster risk management, climate change adaptation, and environmental law and to promote synergies with other pertinent sub regional mechanisms' (ibid.).

The African Ministerial Conference on the Environment (AMCEN) is an example of such cooperation. Founded in 1985, it aims to strengthen cooperation between African governments on issues relating to environmental degradation and the food and energy needs of the continent's people (IISD, 2011). Such organisational structures should be strengthened, and focus particularly on the need for greater clarity on the security implications of climate change.

Civil Society and Local Governance

Civil society organisations have an important role to play in driving governments and communities to act in mitigating climate change, exploring and disseminating adaptation techniques, and also highlighting marginalised voices in climate change debates.

November 2010 saw the world's first 'Shadow Climate Tribunal' in Bangladesh, organised by the NGO the Campaign for Sustainable Rural Livelihoods. In this meeting, people, who have been affected by climate change, spoke out about their suffering. Mamtaz, the widow of a fisherman, who had been killed in a storm, spoke of the impact upon her life. Mamtaz said that her husband died in an 'unpredictable, sudden, and very violent storm, a recent phenomenon in the Bay of Bengal' (Green, 2010). The tribunal heard that rising sea surface temperatures have caused more volatile, more frequent, and more unpredictable storms in past years. This unpredictability means that storm warnings often come too late, when fishermen are already at work. This volatility is what caused the death of Mamtaz's husband (Green, 2010). Such meetings may prove a vital tool for recording the human consequences of climate change, and giving victims a space in which they may have a voice and an opportunity to influence others.

Civil society can also work alongside local governance initiatives to encourage the use of traditional conflict resolution mechanisms in dealing with newly constrained circumstances e.g. competition over natural resources. In many parts of the Global South, local informal mechanisms (e.g. forest-user community groups) are more relevant, trusted and therefore effective than state-administered justice and security policies (Campbell, 2010). These are 'effectively the safeguards which, depending upon their responsiveness and effectiveness, will – or will not – prevent the additional pressures on resources from translating into insecurity or violence' (ibid., p. 4). Support for local institutions and civil society (from international NGOs, international institutions and national governments) is thus integral to the progress of successful adaptation and mitigation policies (Tacoli, 2011).

There may be occasions, however, where civilian agencies are insufficient or absent, for example in distant frontier and border areas. In these areas, resilience could be driven by interagency cooperation, including the military. In Latin America in particular, the military already fill many roles unoccupied by civilians – for example military doctors in remote areas (Brock, 2011). Now, forces may be called upon to support civilian authorities in adaptation and building resilience (Ramirez and Butts, 2011). There is already a lot of collaboration and military involvement in disaster relief and emergency, and of the military working with civilian agencies to protect natural resources in regions, such as Latin America (Zala, 2010: 5).

Adaptation: An Opportunity for Cooperation

Though mitigation must be the main focus of government responses to climate change today, necessary adaptation can be promoted and financed, in order to delay and manage the effects of climate change on communities. These adaptation policies must be implemented in a 'conflict-sensitive' manner.

Across the Global South, community-based organisations are training and building capacity in their villages, towns and cities for livelihood and farming strategies that allow people to cope with a changing climate. In Bangladesh, varieties of rice developed by the Bangladesh Rice Research Institute are being adopted that are able to cope with levels of soil salinity up to four times higher than rice varieties currently in use (IRIN, 2010). In Burkina Faso, Reseau MARP - an NGO working on food security for rural populations - is promoting techniques for soil protection, including 'rock belts', designed to prevent rain from sweeping soil away in the increasingly regular floods (Baird, 2009).

Effective coping strategies such as these are likely to defer or prevent migration (internal or external), which will limit the likelihood of conflict between 'host' and 'migrant' peoples. It will also reduce impacts upon human welfare, which in turn will reduce tensions driven by marginalisation and frustration around the inequities in the main impacts of climate change (those who have caused global warming the least, and have the least capacity to deal with climate change, suffering the most).

Resettlement of communities displaced by climate change could also have positive affects, in galvanising international cooperation to solve environmental issues and particularly to provide mitigation and adaptation funding, and giving 'host' communities in the Global North a personal relationship with those most affected by climate change, spurring them into action (Kelman, 2008).

Climate change has the potential to reshape our economic and social systems. As such, it is also an opportunity to promote collaboration and co-existence between Northern and Southern states, forcing people to work together to find solutions (PACJA, 2009). This scenario would foster mutual dependence, solidarity and trust; industrialised states independently securing themselves against the adverse effects of climate change will only exacerbate the sense of "the West versus the rest".

Conversely, unilateral adaptation strategies may actually drive insecurity further. For example, Iran has constructed a dam on the Khabour River that cuts off vital supplies to the wetlands and marshes of Southern Iraq (Assaf, 2010: 26). Both nations can be expected to divert water from their rivers over coming years, particularly through extended periods of drought – this will accentuate water scarcity in neighbouring Syria (ibid.). Policies like this that hinder the water access of other nations (particularly nations already living with water insecurity) will increase tensions. It is important, therefore, that adaptation addresses power relations - expressed in gender inequalities, economic inequities and human rights violations – promoting fair access to resources and services (PACJA, 2009). Where adaptation measures are unilateral, rather than cooperative, conflict is more likely to occur.

In terms of climate change displacement, the task is to urgently build a coalition of all stakeholders: from communities, who are likely to have to move (permanently or temporarily), through to civil society and inter-governmental groups, working across disciplines, who can work with governments and regional institutions (such as the European Union) of those countries, whose citizens are likely to move as a result of climatic change, and those likely to welcome externally displaced peoples. This task has begun recently in the UK with the foundation of the UK Climate Change and Migration Coalition, which aims to bring together humanitarian, human rights, refugee, conflict, environment, and development agencies. Such coalitions need to work across and between local, regional and international levels.

It is vital that these are managed well. A 'closing the castle gates' attitude may only breed greater tension. Repressive responses to migration spark unrest, such as in April 2011 when asylum seekers[17] in a Sydney detention centre rioted and set fire to the facility, with a small group raising banners on the roof reading "We Need Help" (Hockley, 2011).

Pioneering initiatives could build on the interpersonal links between communities: bringing together community leaders and groups of 'migrant' and 'host' communities, building links between them in preparedness for the migration that is likely to occur. This is an alternative to the securitisation of migration that is already occurring. Whilst New Zealand, for example, has already agreed to accept the population of Tuvalu once their island becomes uninhabitable, India has started to build a 2,500 mile security fence along its border with Bangladesh, with the influx of climate change migrants being cited as a motivation (Chowdhury, 2011).

A Shift Away from Carbon-based Economies

The recognition of the impact of greenhouse gas emissions, including carbon dioxide, methane and nitrogen oxide, is occurring at a time when readily accessible fossil fuels, such as oil, are running out. We need to diversify our energy resources. The alternatives we turn to must be renewable and sustainable. A move away from carbon-based economies is crucial if the security implications of climate change are to be avoided. This diversification will also ease tensions around competition over energy resources.

Investment into renewable energy sources must increase. Onshore and offshore wind power, thermal energy, and photovoltaic solar technology, as well as some forms of marine energy (wave, tidal etc.) are all technologically viable alternatives to production of energy from fossil fuels. However, uptake of these should not occur without meaningful consultation with local groups, else the problems related to biofuels in Paraguay will be repeated.

Investment in energy efficiency technologies and practices is also crucial. Simply making the technologies and buildings we have now more efficient would make a huge difference to our carbon emissions, and prevent the potentially environmentally and politically destructive scramble for new sources of fuel.

As we have seen with the increasing cultivation of crops for biofuels in Latin America, just because a source of energy is renewable does not mean it does not have the potential to be environmentally and

---

[17] Many of whom originally came from Sri Lanka, Iraq and Afghanistan.

socially damaging. In some cases land cleared for these crops can lead to the reduction in carbon dioxide absorption that deforestation causes. 'We cannot sacrifice the poor to meet the rich world's energy demands' (Tansey, 2011), this would only intensify marginalisation and resentment in areas of environmental degradation, and make insecurity and violent conflict between law enforcers and local populations more likely. Future energy policies must thoroughly consider issues of environmental and social impact before embracing renewable energy solutions.

In some areas, energy insecurity is already necessitating the use of sustainable energy sources, such as solar panels. Palestine has more solar water heaters per capita than anywhere else in the Middle East. This is due mainly to the security situation, which results in an unreliable water supply from Israel to the Occupied Palestinian Territories (Gelil, 2009: 24). China, also, which up until recently has largely relied on coal (the commercial energy source with the highest emissions of carbon dioxide per unit of energy produced), has launched a massive renewable energy programme. This programme makes it likely that China's emissions will keep growing (at a slowing rate) until 2025, but then stabilise and decline from then on (Siddigi, 2010).

Conclusion: Mainstreaming Climate Change - A Whole of Government Response

With the number of people affected by climate change set to significantly increase in the next twenty years, potentially making it the greatest emerging humanitarian challenge of our time (BIPSS, 2009), the issue is fast becoming an important security challenge. When the increased instability of this humanitarian challenge (such as food insecurity) is combined with persistent socio-economic divisions, the potential for social unrest and political instability is considerable (Zala and Rogers, 2011). As well as generating new conflicts, climate change acts as a threat multiplier – exacerbating existing tensions and divisions - especially in already fragile situations.

Direct impacts and secondary impacts will include an increase in extreme weather events, competition over natural resources, food and water insecurity, displacement and increased migration of peoples, destruction of infrastructure and changing health risks. Such factors may all increase the likelihood of 'fragile states toppling over, becoming failed states' (Juma, 2010). It is just such situations, when a government can no longer deliver services to its people, that 'conditions are ripe for extremists (...) to fill the vacuum' (Patwary, 2011).

The security implications of climate change need to be addressed at a local and international level, through the United Nations, regional forums, national government, through local administrations and civil society.

Climate change demands a whole-of-government response, with environmental change and degradation taken account of in an integrated effort from Ministries of Environment, Defence, Energy, Development, Finance, Health, and Foreign Affairs. This needs to amount to more than a 'green wash', characterised instead by bold and visible steps towards an economy not based on carbon (for example through a massive scale-up of funding for research and development into renewable energy sources), which recognises the joined-up nature of security threats, examining key determinants e.g. water, land, agriculture, health, energy, disaster risk management and early warning systems, in concert (Campbell, 2010).

With the defence policy community also 'on board', it must also go further, and recognise the value in engaging with their counterparts in the South on this issue, giving civil society organisations and analysts from the Global South a greater say in shaping security policies that will ultimately affect them. Initiatives such as the *Cartagena Dialogue for Progressive Action* - a grouping of around 30 developed and developing countries from all regions of the world that works to 'circumvent the north/south divide' (Independent Diplomat, 2011) - are crucial if progress is to be made. This group was instrumental in the Cancún Agreements at COP-16 in Mexico (ibid.). Such engagement will help ensure that the issue of climate change is approached by security analysts using a human security framework; cooperation with development and human rights agencies, who work on climate, change should follow.

A militarised response that relies on the control paradigm – attempting to 'keep the lid' on threats through military force and political containment, without addressing the root causes – will not only be ineffective, but is likely to exacerbate conflicts and insecurity. What is needed instead is a shift in the security community towards strongly advocating for a rapid shift to a low-carbon society, as a precaution against

future conflicts. Such voices can highlight that 'securitising' a concept (making it the object of security analysis) does not necessarily mean militarising the response.

Internationally, the security concerns associated with climate change are likely to engage the military sooner rather than later. Adaptation to climate change has been labelled a 'powerful vehicle' for U.S. military engagement in Latin America for example (Ramirez and Butts, 2011). The undertaking of such operations must continue with the full engagement of national governments in Latin America, given the history of American intervention in the region, and the negative associations this has.

Mitigating conflicts around climate change can be achieved mainly through mitigating the effects of climate change itself. Whilst there must be conflict-sensitive adaptation and diplomatic preparations for the impacts of climate change that we already know are likely to occur (such as migration and competition over natural resources), the most significant response to the security impacts of this issue should be action to reduce green house gas emissions and protect existing 'carbon sinks' (such as rainforests); these steps will prevent the more catastrophic expected elements of climate change[18] and thus prevent the most dangerous conflicts.

---

[18] For example, if temperature rise goes beyond 3 degrees on average since 1990 levels (Lynas, 2008).

References

Abbott, C., Rogers, P. and Sloboda, J. (2006) *Global Responses to Global Threats*, Oxford Research Group

Abbott, C., Rogers, P. and Sloboda, J. (2007) *Beyond Terror – The Truth About the Real Threats to Our World*, Oxford Research Group. (Rider, Random House)

Abdi, A. (2011) 'Climate Change Pilot Project launched in Northern Kenya', *The Standard*, Nairobi, 25 January

Adow, M. (2009) *Climate Crisis – Global and African Dimensions*, presented at Pan African Climate Justice Alliance meeting, August, Accra

Africa Talks Climate (2010) *The public understanding of climate change in ten countries*, British Council and the BBC World Service Trust, London

African Union (2009) *African Union Convention for the Protection and Assistance of Internally Displaced Persons in Africa (Kampala Convention)* Special Summit of the African Union, 23 October 2009 [internal-displacement.org]

Altieri, M. A. and Bravo, E. (2007) *The Ecological and Social Tragedy of Crop-based Biofuel Production in the Americas*, Institute for Food and Development Policy*,* Oakland.

Araya, M. (2011) *The Squeezed Middle: Why Latin America Matters for Climate Politics*, Brown University Conference, 8 April

Assaf, H. (2010) 'Water Resources and Climate Change' in M. El-Ashry, N. Saab, B. Zeitoon (eds.), *Water: Sustainable Management of a Scarce Resource*, Arab Forum for Environment and Development 2010 Report, pp. 25 – 38

Baird, R. (2008) *The Impact of Climate Change on Minorities and Indigenous Peoples,* Minority Rights Group International, London

Baird, R. (2009) 'Burkino Faso – Rays of Hope', *Emel*, Issue 58, July, [emel.com]

Bangladesh Institute of Peace and Security Studies [BIPSS] (2009) *Climate Change and Security: The Security Dimensions of Climate Change*, September, Dhaka

BBC (2010) *The Price of Bio Fuels*, BBC World Service Radio, 26 April

Brock, H. (2011) *Bridging the North-South Divide: Sustainable Security for all*, Oxford Research Group, London

Bronen, R. (2008) 'Alaskan Communities' Rights and Resilience', *Forced Migration Review*, Issue 31, pp. 30-32.

Campbell, I. (2010) *Climate change and conflict*, Saferworld, London

Centre for Research on the Epidemiology of Disasters [CRED] (2010) *Disaster Data: A Balanced Perspective*, CRED Crunch, Issue 19 (February 2010) and Issue 23 (February 2011)

Chowdhury, S. H. (2011) 'Climate-induced Mayhem likely to Start in Bangladesh', 23 February [SaberHossainChowdhury.com]

Clarke, W. (2008) 'Social and political context of conflicts' *Forced Migration Review*, Issue 31, pp. 22-23

Clifford, P. (2007) 'All creation groaning: a theological approach to climate change and development' *Christian Aid*, London

Cochabamba Declaration [World People's Conference on Climate Change and the Rights of Mother Earth] (2010) *People's Agreement of Cochabamba*, April, Cochabamba

Center for Naval Analysis (2007) *National Security and the Threat of Climate Change*, CNA Corp, Virginia

Dalrymple, S., D. Hiscock, A. Kalam, N. Husain and Z. Rahman (2009) *Climate Change and Security of Bangladesh: A Case Study*, Report, Bangladesh Institute of International and Strategic Studies (BIISS) and Safer World, Dhaka and London

Democracy Now (2009) *"We Are Not Begging for Aid" – Chief Bolivian Negotiator Says Developed Countries Owe Climate Debt*, 9 December, [democracynow.org]

El Hassan Bin Talal, Prince (2010) 'Turning swords into Ploughshares', *GulfNews,* 9 April 2010

The Economic Commission for Latin America and the Caribbean [ECLAC] (2009) *La Economía del Cambio Climático en América Latina y el Caribe*, Santiago.

Foresight (2011), *Migration and Global Environmental Change: Final Project Report*, The Government Office for Science, London

Gambari, I. (2011) Sudan: Water for Peace in Darfur, *Daily Trust*, 27 June, [dailytrust.com.ng]

Gandhi, S. (2011) *Women as Agents of Change*, Commonwealth Lecture, 17 March 2011, London

Gelil, I. A. (2009) 'GHG Emissions: Mitigation Efforts in the Arab Countries' in Ed. Tolba, M.K. and Saab, N. (2009) *Arab Environment, Climate Change: Impact of Climate Change on Arab Countries*, Arab Forum for Environment and Development 2009 Report, Beirut

Green, F. (2010) *Shadow Climate Tribunal in Bangladesh: Mamtaz Speaks*, Oxfam blog, 24 November, 2010 [oxfam.org]

Helm, T. and McKie, R. (2011) 'Coalition commits Britain to legally binding emission cuts', *The Guardian*, 14 May 2011

Hockley, C. (2011) *Violence won't help you Gillard's warning to detainees after riot, blazes*, The Advertiser, 22 April, Canberra

Honig, Shira (2011), "Climate change and statelessness: When does a state disappear?", *Climatico*, 15 June [climaticoanalysis.org]

Independent Diplomat (2011) *Independent Diplomat: The Diplomatic Advisory Group*, [independentdiplomat.org]

Intergovernmental Panel on Climate Change [IPCC] (2007) "1.1 Observations of climate change" in *IPCC Fourth Assessment Report: Climate Change 2007*, Geneva, Switzerland

International Institute for Sustainable Development [IISD] (2011) 'African Ministerial Conference on the Environment', *IISD*, Winnipeg, [iisd.ca/africa]

IRIN (2010) *Bangladesh: Salt-resistant paddy offers hope to farmers*, IRIN News, Dhaka, [irinnews.org]

Jena, M. (2010) 'Rivers a source of rising tension between Pakistan and India', *Reuters AlertNet,* 12 April 2010 [trust.org/alertnet, accessed 31 March 2011]

Juma, M. (2010) 'Security and regional cooperation in Africa: how can we make Africa's security architecture fit for the new challenges' in Heinrich Böll Foundation, *Climate Change Resources Migration: Securing Africa in an uncertain climate*, Heinrich Böll Foundation Southern Africa, Cape Town, pp. 16 – 25

Kartiki, K. (2011) 'Climate change and migration: a case study from rural Bangladesh', *Gender & Development*, Vol. 19, No. 1, pp. 23 — 38

Kelman, I. (2008) 'Island evacuation', *Forced Migration Review*, Issue 31, October, pp. 20-21

Khattabi, A. (2009) 'Impact of Climate Change: Vulnerability and Adaptation Tourism' in Tolba, M.K. and Saab, N. (Ed.) *Arab Environment, Climate Change: Impact of Climate Change on Arab Countries*, Arab Forum for Environment and Development 2009 Report, Beirut, pp. 121-129

Khan, H. (2010) *Who Will Take the Legal Responsibility of Bangladeshi Climate Victims*, Campaign for Sustainable Rural Livelihoods, Banani [csrlbd.org]

Lean, G. (2005) 'Global Warming: Apocalypse Now: How Mankind is Sleepwalking to the End of the Earth', *The Independent*, 6 February

Lucas, C. (2011) 'Two cheers for the government's climate change budget', *The Guardian,* 20 May

Lynas, M. (2008) *Six Degrees: Our Future on a Hotter Planet*, Harper Perennial, London

Maley, P. and Maiden, S. (2010) 'Julia Gillard to Send Back Boatpeople', *The Australian*, 5 July

Maplecroft (2010) *Big Economies of the Future – Bangladesh, India, Philippines, Vietnam and Pakistan – Most at Risk from Climate Change*, 21 October [maplecroft.com]

Masood, E. (2007) 'Africans and Climate Change', *openDemocracy*, 7 February [opendemocracy.net]

Mateche, D. (2011) 'The Cycle of Drought in Kenya a Looming Humanitarian Crisis'*, The Africa Blog*, January 2011 [the-african.org]

Medany, M. (2008) 'Impact of Climate Change on Arab Countries' in M.K. Tolba, and N. Saab, (eds) *Arab Environment, Future Challenges*, Arab Forum for Environment and Development 2008 Report, Beirut

Memon, N. (2008) 'Climate Change and Disaster in Indus Delta', *Daily Dawn*, 15 December

Memon, N. (2009) 'Climate Change and Future of Large Dams', *Daily Dawn*, 9 March

Menon, Ambassador Vanu Gopala (2010) *Strengthening the Role of the UN in Global Economic Governance*, Statement to the UN on behalf of the Global Governance Group, 2 June

New Partnership for Africa's Development [NEPAD] (2010) 'Progress in Cancun, work begins on Durban' Johannesburg [nepad.org]

Pan African Climate Justice Alliance [PACJA] (2009) *The Economic Cost of Climate Change in Africa*, Nairobi

Patwary, O. (2011) 'Assessing the Security Challenges of Climate Change', *SustainableSecurity.Org*, 13 May [sustainablesecurity.org]

Pachauri, R. (2008) *Global Warning! The Impact of Meat Production and Consumption on Climate Change*, Presentation at the Compassion in World Farming lecture, 2 September, London

OAS (2010) *Declaration of Santo Domingo for the Sustainable Development of the Americas, Inter-American Council for Integral Development*, Dominican Republic, 19 November

Raleigh, C. Jordan, L. and Salehyan, I. (2008) *Assessing the Impact of Climate Change on Migration and Conflict*, World Bank Group, Washington, DC.

Ramirez, M. and Butts, K. (2011) *Civil-Military Collaboration to Address Adaptation to Climate Change in South America*, Center for Strategic Leadership, Issue Paper, Volume 5-11

Reuters (2009) 'Paraguayan Police Special Forces Fall in Before Being Deployed to the Northern Region, in Asuncion', 12 November 2009

Rogers, P. (2009) *Global Security after the War on Terror,* Oxford Research Group, London

Rogers, P. (2010) *Climate Change and Security*, Oxford Research Group, London

Ryan, Y. (2010) *Australia to Climate Refugees: No Boat Migrants Need Apply*, June 2010 [takepart.com]

Shanin, M. (2009) 'Interrelation between Climate Change and Trade Negotiations' in M.K. Tolba, and N. Saab, (eds) *Arab Environment, Climate Change: Impact of Climate Change on Arab Countries*, Arab Forum for Environment and Development 2009 Report, Beirut, pp. 143-150

Siddigi, T. (2010) *China, India and the Copenhagen Climate Impasse*, The East West Centre, 10 January, Honolulu

Simpson, M.C., Scott, D., Harrison, M., Sim, R., Silver, N., O'Keeffe, E., Harrison, S., Taylor, M., Lizcano, G., Rutty, M., Stager, H., Oldham, J., Wilson, M., New, M., Clarke, J., Day, O.J., Fields, N., Georges, J., Waithe, R., McSharry, P. (2010) *Quantification and Magnitude of Losses and Damages Resulting from the Impacts of Climate Change: Modelling the Transformational Impacts and Costs of Sea Level Rise in the Caribbean (Key Points and Summary for Policy Makers Document)*, United Nations Development Programme (UNDP), Barbados, West Indies

Stern, N. (2007) *The Economics of Climate Change – The Stern Review*, Cambridge: Cambridge University Press.

Tacoli, C. (2011) *Not only climate change: mobility, vulnerability and socio-economic transformations in environmentally fragile areas of Bolivia, Senegal and Tanzania,* International Institute of Environment and Development, London

Tansey, R. (2011) *Biofuels and Indirect Land Use Change, or "The road to hell is paved with good intentions",* Quaker Council for European Affairs, May 16, Brussels [qceablog.wordpress.com]

Tren, R. (2002) *Malaria Control and Climate Change in India*, Julian Simon Centre for Policy Research, New Delhi

UNCCD (2007) *Climate change and desertification*, United Nations Convention to Combat Desertification thematic fact sheet series, Bonn

Vargas, D. (2007) *The Dark Side of the Soy Boom*, IPS, 8 November, Asunción

Wapmuk, S. (2009) 'Mitigating the Effects of Climate Change in Nigeria: The Imperative of Public Education and Awareness' in Osita C. Eze & Ogaba Oche (eds.) *Climate Change and Human Security in Nigeria*, Lagos: Nigerian Institute of International Affairs

Wapmuk, S. (2010) 'Climate Change and Environmental Degradation in Nigeria's Niger Delta: The Imperative for Environmental Justice as a Comprehensive Policy Framework' in C. Adebooye Odunayo., A. Taiwo Kehinde., and A. Fatufe. (eds.) *Biotechnology Development and Threat of Climate Change in Africa: The Case of Nigeria*, Volume 2. Göttingen: Cuvillier Verlag Publishers, pp. 250-260

Warner, K. (2011) *Climate and Environmental Change, Human Migration and Displacement: Recent Policy Developments and Research Gaps*, Institute for Environment and Human Security, United Nations University, Bonn

Wijeyaratne, S. (2009) *Fragile Environment, Fragile State: What Role for Conflict-Sensitivity and Peace-Building?*, Discussion paper, Canadian Council for International Co-operation, Ottawa

Zala, B. (2010) *Looking for Leadership: Sustainable Security in Latin America and the Caribbean*, Oxford Research Group, London.

Zala, B. and Rogers, P. (2011), 'The 'Other' Global Security Challenges: Socioeconomic and Environmental Realities After the War on Terror', *RUSI Journal*, Vol. 156, No. 4, pp. 26-33.