



Climate Change & The Military: The State of the Debate

**Prepared for the IES Military Advisory Council
Chaired by Air Marshal AK Singh**

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Foreword by Air Marshal AK Singh

Dear Reader

I am grateful to the research team at the Institute for Environmental Security for producing this useful background document summarising recent developments on Climate Change and Security. I and my colleagues on the Military Advisory Council found it helpful in formulating our “First Statement” that was launched in Washington DC on 29th October (see Appendix II)

The idea of a consortium of think tanks in three continents, backed by government and parliamentary bodies, is a creative way of mobilising global opinion at a critical moment in the debate.

I particularly welcome this updated version which has been prepared for a wider audience in advance of COP 15.

With best wishes

Yours

A handwritten signature in blue ink, appearing to read 'AK Singh', with a stylized flourish at the end.

Air Marshal (Ret) AK Singh, New Delhi
Chairman, Military Advisory Council

Introduction

The debate on Climate Change & Security has grown at a rapid pace over the past three years. In contrast to previous academic discussions on environment and security this process has increasingly been led by voices from the military themselves. For the general public this took concrete form when the CNA convened a panel of retired senior military officers and national security experts, the so-called “Military Advisory Board” and conducted an assessment of the national security implications for America of global climate change. Their landmark report “National Security & the Threat of Climate Change” was finally published in April 2007. It found that climate change constituted a “threat multiplier” to existing security risks in some of the most volatile regions of the world. Later that year the Center for a New American Security published their significant booklet “The Age of Consequences: The Foreign Policy & National Security Implications of Global Climate Change”.

Interest in the subject was not limited to American think tanks. In the same year Brahma Chelaney published “On the Front Line of Climate Change: International Security Implications”, in New Delhi and the FOI, the Swedish Defence Research Agency published Peter Haldén’s “The Geopolitics of Climate Change: Challenges to the International System”. The OSCE had been active in the field throughout 2006 and 2007, even if the “Madrid Declaration” of November 2007 fell short of the hopes of the Spanish Presidency of the OSCE. The European Union launched the “Solana Report” entitled “Climate Change & International Security” on 13th March 2008. The pace of academic, political and security activities in the field has not slackened in the last eighteen months.

This publication however takes as its starting point the paper by Nick Mabey “Delivering Climate Security: International Security Responses to a Climate Changed World”, published as a RUSI white paper in April 2008. We do so because Nick’s paper is addressed primarily to the defence and security community and lays out practical indicators of the way forward. The document starts with a background to the debate extracted from Nick Mabey’s report. It looks briefly at scientific and academic developments; reviews the development of the debate since the spring of 2008 and concludes with some recommendations for further action and a bibliography for those who wish to read deeper into the subject.

It is the belief of the authors of this text that recent evidence of abrupt climate change and threatening tipping points has brought the challenge of climate change into the urgent timescale of military contingency planning. Climate change is a common security problem that requires global co-operation in which the defence and security community have an important role to play. It is our fear that if COP 15 fails to deliver an effective, predictable and institutionally robust climate protection system, that preserving security and stability at current levels will become increasingly difficult.

It is clear to us that on issues of climate change and security, the past is not an adequate guide to the future. The broader climate policy making world needs to hear from the defence and security community about the concerns of the military. If the military were to be excluded from the discussion at this stage on the spurious grounds that they would be “securitising” the debate, we should not be surprised if individual national militaries developed separate and potentially conflicting approaches to the subject.

This paper aims to describe the state of the current debate on climate change and security, and provide a framework for discussion in which the military can play a clear role in the debate on climate change mitigation and delivering sustainable human security, while starting to address the direct impacts of climate change on its core aims of national security, regional and global stability.

The Background to the Debate

Conflict over natural resources, whether driven by need or greed, has always been a part of human society. The past shows us that social tensions driven by past climatic change destroyed many advanced societies, such as the droughts which drove the collapse of early civilisations in Mesopotamia and Peru. The coming decades will see rising resource scarcity, greater environmental degradation and increasingly disruptive climatic change at levels never experienced before in human history. In an increasingly uncertain world these trends are disturbingly predictable.

Climate change is already creating hard security threats, but it has no hard security solutions. Climate change is like a ticking clock: every increase in greenhouse gases in the atmosphere permanently alters the climate, and we can never move the hands back to reclaim the past. Even if we stopped emitting pollution tomorrow, the world is already committed to levels of climate change unseen for hundreds of thousands of years. If we fail to stop polluting, we will be committed to catastrophic and irreversible changes over the next century, which will directly displace hundreds of millions of people and critically undermine the livelihoods of billions. There is some scientific uncertainty over these impacts, but it is over when they will occur not if they will occur unless climate change is slowed. Preventing catastrophic and runaway climate change will require a global mobilisation of effort and co-operation seldom seen in peacetime.

In the next decades, climate change will drive as significant a change in the strategic security environment as the end of the Cold War. If uncontrolled, climate change will have security implications of similar magnitude to the World Wars, but which will last for centuries. The past will provide no guide to this coming future; a robust response will require clear assessments based on the best scientific projections.

Despite these threats, current responses to climate change are slow and inadequate. Even Europe, which leads global efforts to move to a low-carbon economy, is only spending the equivalent of around 0.5 per cent of its combined defence budget on tackling climate change, though this does not count the action achieved through direct regulation. There is a need for more direct and interventionist action to prevent climate risks. One reason for this is that economic analysis has systematically undervalued the potential extreme impacts of climate change, underplaying the implication of the most severe risks to policy makers. But a failure to acknowledge and prepare for the worst case scenario is as dangerous in the case of climate change as it is for managing the risks of terrorism or nuclear weapons proliferation.

Security sector actors must not just prepare responses to the security challenges of climate change; they must also be part of the solution. Partly, this means reducing the climate impact of their operations and activities. Much more importantly, it means communicating the security implications and costs of uncontrolled and extreme climate change to political leaders and the public. Unless achieving climate security is seen as a vital and existential national interest, it will be too easy to delay action on the basis of avoiding immediate costs and perceived threats to economic competitiveness.

But climate change is also a security opportunity. A low-carbon global economy will be a far more energy-secure economy. Trillions of dollars otherwise invested in oil and gas production increasingly concentrated in unstable regions will instead deliver new technology and local clean energy sources. This will lower geo-political tensions over fossil fuel reserves, and greatly reduce the security impact of 'peak oil' when it arrives.

The security sector has the vital – and expensively acquired – experience of how government can drive technological development and infrastructure deployment at a similar scale to that needed

to respond to climate change. Security actors should promote dramatically increased investment in the development and deployment of technologies critical for energy and climate security. This will be expensive, but is achievable. Recent estimates suggest this would require investment commensurate with current spending on the ‘war on terror’, and if a crash response is needed to respond to abrupt climate change, investment at levels similar to the Apollo Programme.

The reality of climate change will require fundamental changes in how international relations are conducted, and will alter much of the focus of international security policy. It will change strategic interests, alliances, borders, threats, economic relationships, comparative advantages and the nature of international co-operation, and will help determine the continued legitimacy of the UN in the eyes of much of the world. Climate change geo-politics will extend far outside the environmental sphere, and will link old problems in new ways. Managing the complexity of our collective climate security will become an ever more important part of foreign policy.

Climate change will require OECD countries to revisit their international industrial policies by sharing advanced energy technologies and funding large-scale investment in economic competitors such as China and India. OECD countries must recognise that achieving climate security is a more vital national interest than the narrow maximisation of domestic company profits. This will include a more flexible approach to co-developing new technology and new flexibilities in applying intellectual property rights.

Energy security interests will be increasingly delivered through co-operation with energy consuming countries on technology development and diffusion, rather than through relationships with producing countries on fossil fuel discoveries and delivery. Declining use of imported fossil fuels may cause tensions with many producer countries. Countries will not be able to achieve national energy security by undermining other countries’ climate security by using coal without capturing the carbon. There will be no agreement on climate security without guaranteeing all countries’ energy security. Nuclear proliferation mechanisms will need to be greatly strengthened if nuclear power is to be deployed at a scale which would make a real difference to climate change. Climate change will be used as a political mask for some states to acquire nuclear technology for military purposes, and development and sharing of more militarily benign energy alternatives is the best protection against this. A major climate change disaster in the next decade would also drive pressure for a “crash programme” of rapid deployment of nuclear power worldwide; at rates which would compromise the ability of the current nuclear industry supply chain to preserve safety or security.

Rising sea levels and melting ice caps in the Arctic are already leading to territorial disputes between major powers. The disappearance of small islands could release valuable marine resources into the already contested international waters of the Indian and Pacific Oceans and the South China Sea. The rights of environmental refugees and migrants will become a source of national and international tensions, especially in delta regions such as Bangladesh, Nigeria and Egypt. Fisheries stocks will collapse or move, destroying millions of people’s livelihoods and undermining delicately negotiated international management regimes.

Countries will respond to the forecasts of more erratic water flows in all major river basins by building new upstream dams and water storage. Such “climate change adaptation” will drive cross-border tensions in the next decade, including the potential for armed inter-state conflict. Strengthened international rules and more activist preventative diplomacy from the international community will be needed to peacefully manage changes in shared water and fisheries resources, and to preserve the rights of displaced people and states.

Issues of justice and ethics lie at the heart of climate change; the rich have caused the problem but the poor are bearing the brunt of the impact. Global resentment against the current

international order will rise if there is a failure to agree and deliver aggressive emission reduction goals, or adequately help the victims of climate change adapt and obtain compensation. Radical protest movements are building around the globe, and direct action against new airports and power stations is growing. Violent extremists will use these tensions to fuel existing causes and Osama Bin Laden has already spoken several times on the inequities of climate change and the negative role of the US in the Kyoto Treaty. Muslim countries will be among the hardest hit by climate change. If frustrated by inaction to slow climate change, radical environmental movements may spawn eco-terrorist groups in a parallel with the evolution of extreme left-wing movements in the 1970s. Failure to act decisively will undermine the legitimacy of the international system, reducing its effectiveness in tackling other security threats such as nuclear proliferation.

Overall, climate change could drive more collaborative approaches in inter-state relations or it could exacerbate tensions between and within countries, leading to a 'politics of insecurity' as countries focus on protecting themselves against the impact and securing their access to critical resources globally. The pattern of cooperation which arises will depend on how effectively climate change is incorporated into mainstream foreign policy, and in practice changes the balance of national interests in major countries across a wide range of security and geopolitical issues.

Climate change is already increasing conflict risks in unstable regions - especially Africa - as fragile governance systems are overwhelmed by the social stresses released by drought, famine, flood, migration, extreme weather events and rising sea levels. At moderate levels of climate change, conflict causality is complex and climate change acts as a stress multiplier of existing tensions. In many cases armed conflict will be preventable with effective intervention and preventive measures. Despite the remaining uncertainties over precise climate change impacts in particular regions the growing information on present and future serious climate security impacts is as good, if not better, than other information routinely used in security planning and assessment. We do not need to know precisely where the next terrorist attack will be to have an effective strategy to prevent it. If global action is not effective and climate change is not slowed by 2020-30 then critical environmental thresholds are likely to be exceeded, and climate change will become a primary driver of conflicts between and within states. Under this 'business-as-usual' scenario there would be massive human suffering and instability across the globe and even the largest global military powers would not be able to defend the security of their global interests, trade, investments and national security.

Over the next decades, while climate impacts are still likely to be moderate, the determinant of whether climate change drives serious conflict lies in how political systems respond to the tensions it creates. Too often, analysis of climate change impact assumes that all governments will act to maximise the common good in response to change. But resource management regimes in much of the world are already built upon communal divisions and conflict, and are highly unlikely to respond in a predictable, rational and inclusive manner to climate stresses. Experience of current instability in the Sahel – especially Darfur – shows how quickly disputes over access to resources in times of environmental stress can become politicised into and exacerbate existing communal conflicts based on ethnic, religious or other lines. These conflicts develop their own internal dynamics, but will see no sustainable solutions unless the root causes of resource grievances are not addressed.

Achieving security in a climate-stressed world will require a more proactive and intensive approach to tackling instability in strategically important regions with high climate vulnerability and weak governance. This will require changes across the security sector, with a stronger incorporation of long-term and structural risk factors into planning and a willingness to engage effectively with tough governance challenges; bringing diplomatic, development, intelligence and

law enforcement capabilities to bear. This does not just require implementation of some general 'conflict prevention' agenda, but direct focus on the strategic necessity of managing increased resource use tensions. There will be no long-term stability in Afghanistan unless rural livelihoods and water management are robust to climate change. Attempts to build a 'hearts and minds' coalition against Islamist extremism will be crucially undermined when many of the main sources of job creation for young men in North Africa are being undermined by warmer temperatures and declining rainfall.

The impact of climate change on instability will also require changes to how climate adaptation is handled in the international climate change regime. To date climate adaptation has mainly been framed as a technical development activity, but in reality it will involve complex political and diplomatic interventions in difficult and highly charged internal resource management issues. The political economy of resource management must lie at the heart of all adaptation measures as they deal with the resources of subsistence and identity: land, water, food and security. More controversially, access to international adaptation finance may need to be made conditional on countries implementing reforms to internal resource management policies to improve social resilience and prevent conflict and marginalisation of vulnerable groups.

All these impacts are already occurring as the earth gradually warms in the early stages of climate change. If climate change is not controlled before we meet critical 'tipping points' in natural systems the impact will become catastrophic, with large parts of the world becoming uninhabitable for their current populations by the middle of the century. Such an outcome would overwhelm current security and humanitarian capacity to respond, and would make a mockery of the international communities commitments to a 'Responsibility to Protect' and the achievement of the Millennium Development Goals.

The world has the financial resources and technological potential to deliver a secure and low-carbon economy. The question is whether we are capable of making the political choices to mobilise these resources in pursuit of our collective climate security. Security issues are fundamental for making the political case for urgent action. Security sector reform will be central to managing the consequences of the changes we are already undergoing. Security actors have a strong interest in ensuring a bold and rapid transformation to a secure and low-carbon economy, as this will help preserve a relatively benign global security environment and also reduce tensions over access to dwindling fossil fuel reserves.

The changing security context driven by climate change requires an imaginative and forthright response from security actors if we are to preserve our vital interests and values in this century. The first signs of this response are emerging, but the necessary changes will need to happen much faster than in the past if they are to match the remorseless ecological timetable of a changing climate driven by a dynamic global economy.

Adapted by Nick Mabey from the Summary of 'Delivering Climate Security. International Security Responses to a Climate Changed World', RUSI, 2008

Academic & Scientific Developments 2008 – 2009

Climate science available since publication of the IPCC 4th Assessment indicates both that current climate conditions are changing more quickly than had been predicted, and that past changes have tended to be more abrupt than gradual. Melting of the summer sea ice in the Arctic, and accelerated melting of the Greenland ice sheet (GIS) are the two most visible signs of current changes, and are consistent with other current evidence and paleo-climatological trends. Marine and land releases of methane are greatly increasing, a result of warming waters and melting permafrost in arctic regions, while in equatorial zones mountain glaciers are rapidly

disappearing even when air temperature changes are only marginal. IPCC models did not include significant feedback effects, and resolution of ice sheet (glacier) models was fairly rudimentary compared to atmospheric and ocean circulation models. New warnings concerning climate tipping points that are near, or may already have been crossed were presented at the Copenhagen Climate Science Conference in March 2009 and at the American Geophysical Union's Chapman Conference in June 2009. The state of the science has often outpaced the ability of policy makers and negotiators to keep abreast of shifting conditions and new understandings.

Recent research also suggests that a focus on air temperatures and abrupt changes during the end of the Younger Dryas Period (11,500 years ago) may be misleading. The ice core records from Greenland and Antarctic provided the clearest and most reliable records of climate conditions dating back tens of thousands of years. Other proxy records of climate (eg sediment cores) lacked the resolution of ice cores, so abrupt changes outside the Arctic have not been studied as intensely. Subsequent work by non-glaciologists (including archaeological records) strongly indicates that abrupt changes in non-temperature related systems has occurred at numerous times since the Younger Dryas, most notably at 3.2, 4.2 and 5.2 thousand years before present. Although not seen in the ice core records, severe and abrupt changes in precipitation patterns affected wide areas of more southern latitudes. This includes the end of the African Humid Period (when much of what is now the Sahara Desert was forested), sudden loss of the Mediterranean Westerlies, and abrupt loss of monsoons in Western India and Ethiopia (including up to 80% loss of water in the Nile River). Archaeological records of the Akkadian Empire in northern Mesopotamia suggest that the changes in precipitation were sudden enough to have forced large-scale migration from the region and a collapse of regional kingdoms. These records suggest that we have been too focused on temperature changes and evidence as seen from ice cores, and that the climate system may be far more sensitive to abrupt shifts than was earlier believed.

The scientific understanding of abrupt changes has also led to interest in developing foresight and early warning systems. Strategic foresight (sometimes also referred to as strategic environmental intelligence) relies upon detection of weak signals to give warning of impending, abrupt changes. Complex dynamical systems typically exhibit fluctuations or "flickers" as they reach tipping points, and increasingly security analysts are attempting to develop system that can process real-time environmental information to warn of possible changes. In scientific terms, this refers to non-equilibrium dynamics as a complex system approaches a catastrophic bifurcation. In practical terms, this means understanding how smaller changes in a system can provide warning so adequate preparation can be attempted in advance. Major and abrupt environmental changes will create disruptions to which it will be difficult to respond, and security services typically work in preparing for potential risks, not wanting simply to respond to existing problems and security threats. The Global Energy and Environmental Strategic Ecosystem (GlobalEESE), sponsored by the US Department of Energy (USDOE), and the Global Futures Forum (GFF), sponsored by USDOE and the US Department of State, have for several years already been developing international, unclassified information systems to detect weak signals and communicate potential risks to policymakers. Similar projects, such as SECURENV in the European Union, also aim to provide database integration of possible environmental futures.

Scientific research in scenario construction has likewise provided new, potential tools for security and military services. Risk assessment scenarios and military "war-gaming" can be combined to use the best available and most recent scientific research to examine the systemic impacts of environmental changes. In the past, scenarios were constructed using intuitive judgments of future conditions, often extensions of existing trends and with underlying (if often unspoken) assumptions concerning environmental conditions and human reactions. Future security scenarios routinely assumed that environmental conditions would be similar to those existing. Researchers are now developing robust methods to incorporate abrupt changes into such

scenarios. These now look at how geophysical changes cascade into ecosystem and infrastructural systems, in turn affecting social and political systems. They trace feedback effects through and between these different, complex systems. These methods also allow tracing what assumptions are made for multiple dimensions of changes, better ensuring that “black swan” scenarios are less likely to be missed. Integration of science and risk can therefore provide much better resolution of ‘what if?’ scenarios.

Scenarios currently under construction suggest that militaries will potentially face drastically different operational conditions in certain regions, in terms of water availability, disease risks, and natural resource availability. Geopolitical implications of naval and merchant access to the Arctic Sea are perhaps only the most obvious of such changes. Stability concerns will also affect regions where acute and abrupt environmental changes, with varying ranges of probabilities. Some areas are at high risk of losing water supplies as a result of accelerated glacial melt, while other areas face high impact risks (eg increased incidence of tropical storms, or sudden and sustained drought) but where probabilities are difficult to quantify.

An Anatomy of the Debate 2008 – 2009

Much of the analytic activity in 2008 was stimulated by the UN Security Council debate on climate change and security in 2007. However the relevance of these issues was driven home in a very concrete way by the unprecedented and unexpected interdependent food, water, mineral and oil price shocks in that year. While public attention then shifted to the financial crisis, the impact and severity of the resource crunch has greatly influenced security planners and sparked a wave of defensive acquisition of international land and mineral resources by many major countries.

The key development in the EU position on climate change and security was the joint report of the High Representative and the European Commission to the European Council (known as the ‘Solana Report’) which was published in March 2008. The Report recognised that the risks brought by climate change are not just of a physical nature, they also include political and security risks that directly affect European interests. The development of the Solana Report has provided the infrastructure for European responses on the subject, in the form of a Road Map to Copenhagen, linking EU Presidencies and interested Member States. This system of consultation between the Member States, led by December 2008 to a concentration on more detailed analysis of the security implications at regional level; integration of these analyses into the early warning mechanisms and an intensified dialogue with third countries and organisations. The first side event on Climate Change & Security was held in Poznan by the Council. The major act of consultation was in March 2009 at the Asean Regional Forum attended by India and China as well as Canada, Australia and the US. The future of the Solana Report now needs to be considered in the light of the ratification of the Treaty of Lisbon. European countries have been highly active in this area led by the UK, Germany, Denmark and Sweden. In September the UK appointed Rear Admiral Neil Morisetti, a serving officer, as the first “Climate & Energy Security Envoy”. An International Seminar on Climate Change and Security was held in Copenhagen on 17th September, followed by the Swedish Presidency conference on Climate Change and Security in Stockholm on 14th November.

The day before the launch of the Solana Report, NATO held its first conference on climate change and security that involved both its military and civilian wings. The NATO Security Science Forum on Environmental Security addressed the security implications of environmental issues such as climate change, water, energy security, and natural catastrophes and looked at co-operation with other international organisations.

On the other side of the Atlantic the US Presidential primaries were in full swing. Issues of climate change and security became largely encoded in debates about the security of America’s

energy supplies. The CNAS published its paper “Climatic Cataclysm: The Foreign Policy Implication of Climate Change” and the National Intelligence Council published its “National Security Implications of Global Climate Change to 2030”. The requirement for regular assessments of climate change impacts on US security interests by the National Intelligence Council and in military planning is now enshrined in US legislation.

The autumn of 2008 saw the world’s attention switch to the financial collapse. However pre-planned conferences took place in Barcelona on the relationship of the military and climate communities (the IES-IUCN Roundtable Workshop on Environment and Security), and in Paris in early November on “The Role of Military Organisations in Protecting the Climate: 2008”.

The election of President Obama led to a substantial increase in interest on the American position on climate change, and speculation as to how far the new Administration would incorporate climate change and security issues in its re-casting of American foreign policy. As part of a new diplomatic push to regain US leadership on global climate policy, Secretary of State Clinton introduced the first meeting of the US-hosted Major Economies Forum on Climate Change on 27th April 2009 with a speech on climate security. She declared that “the crisis of climate change exists at the nexus of diplomacy, national security and development”. She pointed out how climate change “can breed conflict, unrest and forced migration”.

In the spring of 2009 the report of the National Intelligence Council released unclassified versions of its regional studies and began its next phase of work. The IES held its Climate Change and Security at Copenhagen conference in Washington on 17th March with a range of think tanks to consider how the issue was likely to develop in an Atlantic context in 2009.

NATO’s report “New Horizons”, released ahead of the organisation’s 60th anniversary summit, addressed the challenges triggered by current geopolitical developments. Most of the threats and trends have an environment-related root. A NATO official was quoted as saying: “Climate change is a global problem requiring the involvement of the UN, NATO, EU and other regional organisations. NATO forces must develop the resilience to adjust to changing climate and react to its consequences”.

On 8 May 2009, the Allied Commander Transformation (ACT) released the Final Report on its Multiple Futures Project (MFP), a major exercise to prepare for a New Strategic Concept. “MFP does not pretend to be a crystal ball, but maps in a clear manner possible developments in order to broaden our understanding of what can happen in the world in terms of our collective security”, said NATO Deputy Secretary General Claudio Bisogniero. Climate change was recognised as playing a central role in the various scenarios and NATO is likely to further recognise this threat in its New Strategic Concept.

In May 2009 the CNA published its substantial Report entitled “Powering America’s Defense: Energy and the Risks to National Security”. This built on the CNA’s previous work. By considering the security risks inherent in America’s current energy posture, it reviewed the energy choices the nation could make to enhance its national security. It looked at the impact of climate change on America’s energy choices and national security, and the role the Department of Defense could play in the nation’s approach to energy security. The report found that America’s dependence on fossil fuels, as well as the nation’s fragile electricity grid, constitute a serious and urgent threat to national security – militarily, diplomatically, and economically. It noted that continuing ‘business as usual’ would be perilous. The report warns that, due to the destabilizing nature of increasingly scarce resources, the impacts of energy demand and climate change could increasingly drive military missions. The Military Advisory Board suggests that consistency with emerging climate policies should shape America’s energy and national security planning. Diversifying energy sources and moving away from fossil fuels where possible is critical to future

energy security. The Military Advisory Board calls on the Department of Defense (DoD) to take a leadership role—for government and the nation—in transforming America’s energy posture, starting by reducing its own carbon “bootprint”.

The United Kingdom had sponsored a debate on Climate Change & Security in the UN Security Council as early as April 2007. This was regarded in some circles as controversial. However in June of 2009 the UN General Assembly dramatically changed the political scenery by passing a Resolution on climate change and security and undertaking to publish a Report on the subject in the autumn of 2009. At a stroke this resolution has had the effect of legitimising the debate about climate change and security in the run-up to the Copenhagen negotiations. Yvo de Boer had been calling for such an evolution in the debate for some months. The Secretary General’s Report on climate change & security became available in September. It is a cautious document which highlights, amongst other things, the need to consolidate the achievements of Environmental Security. The summer and autumn of 2009 has seen a plethora of reports and articles on the subject and a vigorous US debate conducted in the context of climate legislation in front of the US Congress.

Appendix I

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Appendix II

Climate Change and the Military MILITARY ADVISORY COUNCIL



First Statement of the Military Advisory Council

The Military Advisory Council of the Climate Change and the Military project, having met in Brussels and Bonn from 7th to 12th October 2009 to assess developments and challenges related to climate change and security, offer the following views to the Parties and Governments of the United Nations Framework Convention on Climate Change (UNFCCC).

Noting that the understanding of climate change and its impact on security is growing amongst a wide and diverse audience;

Noting the continuing contribution to environmental security made by many military authorities and scholars, including their role in analysing global environmental change and their actions in responding to the consequences of climate change;

Noting that the military is a large emitter of greenhouse gases, and further noting its application of technology to promote energy efficiency and lower carbon emissions; and

Believing that incremental, and at times abrupt, climate change is resulting in an unprecedented scale of human misery, loss of biodiversity and damage to infrastructure with consequential security implications that need to be addressed urgently;

Believing that failure to recognise the conflict and instability implications of climate change, and to invest in a range of preventative and adaptive actions will be very costly in terms of destabilising nations, causing human suffering, retarding development and providing the required military response;

Believing therefore that climate change creates a common security problem that requires global and comprehensive co-operation;

Believing that the military community should contribute to the global process of constructing policy responses to climate change that are strong enough to avoid the risks of such future instability;

Believing that if the COP15 fails to deliver an effective and institutionally robust climate protection system, preserving security and stability even at current levels will become increasingly difficult;

The Military Advisory Council, therefore:

1. **Calls** on all governments to work for an ambitious and equitable international agreement on climate in Copenhagen at the COP 15;
2. **Calls** on all governments to ensure that the security implications of climate change are integrated into their respective military strategies; and
3. **Calls** upon the military to be part of the solution by reducing its own carbon "footprint."

On behalf of the CCTM Military Advisory Council and the Institute for Environmental Security:

Air Marshal AK Singh (ret)
Chairman, Military Advisory Council / Project
Director, Climate Change & Security, Centre for Air
Power Studies

Tom Spencer
Project Co-ordinator, Climate Change and the
Military /
Vice-Chairman, Institute for Environmental Security

Climate Change and the Military
MILITARY ADVISORY COUNCIL



Chairman

Air Marshal (ret) **AK Singh**, Distinguished Fellow, Project Director, Climate Change & Security, Centre for Air Power Studies (CAPS), India

Members

Cheikh Ould Ahmed, Head of Fishery Surveillance, Ministry of Fisheries / Former Director of the Navy, Mauritania

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Maj Gen (ret) **Muniruzzaman**, President, Bangladesh Institute for Peace and Security Studies (BIPSS), Bangladesh

Lt Gen (ret) **Bala Nanda Sharma**, Nepal

Maj Gen (ret) **Joseph G. Singh**, Former Chief of Staff, Guyana Defence Force, Guyana

Maj (CIMIC) **Piet Wit**, Dutch Army, The Netherlands

Climate Change and the Military - Press Release
**MILITARY EXPERTS FROM FIVE CONTINENTS WARN
OF IMPACT OF CLIMATE CHANGE ON SECURITY**



Joint statement calls for ambitious and equitable international agreement on climate

Washington, D.C., 29 October 2009

A group of serving and retired military officers from Africa, Asia, Europe, Latin America and the US released a statement today calling on all governments to “work for an ambitious and equitable international agreement” at the global climate talks in Copenhagen in December.

The statement, presented at a meeting today at Brookings in Washington, and issued simultaneously in Brussels, Dhaka, Georgetown, London, New Delhi and The Hague, says that “incremental, and at times, abrupt, climate change is resulting in an unprecedented scale of human misery, loss of biodiversity and damage to infrastructure with consequential security implications that need to be addressed urgently.”

The officers are part of an international initiative on Climate Change and the Military led by the Institute for Environmental Security (IES) in The Hague and 10 other think tanks from Asia, Europe and North America.

IES Vice-Chair, Tom Spencer, former President of the European Parliament's Committee on Foreign Affairs, Human Rights and Defence Policy, said the aim of the statement was to stress that “climate change creates a common security problem that requires global and comprehensive co-operation.”

Quoting from the statement, Air Marshal (ret) AK Singh of India, Chairman of the project's Military Advisory Council and Project Director, Climate Change & Security, Centre for Air Power Studies, New Delhi, warned that “failure to recognise the conflict and instability implications of climate change, and to invest in a range of preventative and adaptive actions will be very costly in terms of destabilising nations, causing human suffering, retarding development and providing the required military response.”

Maj Gen (ret) Joseph Singh, Former Chief of Staff, Guyana Defence Force, added that, “Based on the fact that we have been involved in disaster relief operations, we know the trauma, the human misery, the damage to infrastructure. So that hands on experience gives us the confidence that we have some knowledge and expertise that we can share and work in a collaborated way with decision-makers to anticipate, to pre-empt and to be involved in contingency planning.”

Asked to illustrate an experience from his region, U.S. Brig Gen (ret) Wendell C. King referred to hurricane Katrina that hit New Orleans. He said that America's ability to respond was “severely stressed.” If such a technologically advanced county as the USA struggled in that case, he was concerned about how countries with less capability will be able to deal with more frequent and more severe weather events in the future.

At its first meeting in Brussels earlier this month the group of officers were especially concerned about the rapid increase in glacial melt in the Himalayas which will result in increased flooding followed by devastating water shortages throughout the region.

Maj Gen (ret) Muniruzzaman, President of the Bangladesh Institute of Peace and Security Studies, said that the affects of climate change could lead to the migration of millions of people in places like Bangladesh where the impact of climate change would cause an estimated annual loss to the economy of \$ 1 billion of GDP by 2010 and \$ 5 billion by 2070. Water scarcity will have server adverse impact on human access to fresh water, food production, fisheries and wildlife, river transport, hydropower and human health, according to a recent report by his institute.

The joint statement calls on all governments to ensure that the security implications of climate change are integrated into their respective military strategies and also calls upon the military to be part of the solution by reducing its own carbon “footprint”. - END