



Climate Change and Security Programme  
<http://www.rusi.org/climate/>

## Climate Change: Preparing for the New Security Environment<sup>\*</sup>

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## *Session One: Climate Science and Security*

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**Rob Varley**, Government Services Director at the UK Meteorological Office (Met Office) opened the conference with a presentation outlining current climate change projections, how climate science is being used to prepare for future impacts, future developments in climate change research and how these can be related to policymaking.

The science is clear: atmospheric warming this century will be far greater than in the last thousand years. The extent of the warming will depend on future green house gas emissions. Mid-range emissions scenarios indicate that the climate impacts we should be preparing for include:

- More frequent and intense extreme weather events
- Changes in rainfall, drought, heat waves
- Changes in agricultural productivity
- Population displacement
- Increased vulnerability to flooding and disease
- Increased water stress, including in areas of political interest to the UK

Despite some uncertainties in climate modelling, it is clear that the effects of climate change could be devastating. If climate-driven risks are understood now, action can be taken to reduce impacts before these effects occur. Disaster preparedness in Bangladesh has been improved by:

- Recognising the likelihood of future extreme weather events
- Developing infrastructure and warning systems
- Educating populations about disaster preparedness

More sophisticated climate models are being developed in order to support near-term planning and investment decisions. Close cooperation between climate scientists and decision makers will enable the best decisions to be made despite existing uncertainties.

**Professor Neil Adger**, Tyndall Centre for Climate Impacts Research and lead author on the Intergovernmental Panel on Climate Change's 2007 *'Impacts, Adaptation and Vulnerability'* report, highlighted three key points.

Firstly, the Impacts of climate change will require significant transformations in energy systems and the way societies are organised. Secondly, the security of individuals is bound up with their ability to adapt to a changing climate. Thirdly, adaptation will present difficulties, including the expense of physical adaptation.

His definition of adaptation is three-fold:

- Adapting infrastructure
- Planning for climate change - government's responsibility to look forward and assess risks
- Private sector response - such as from the insurance industry

New research indicates that staying within challenging but survivable levels of climate change would require emissions cuts that are unlikely to be achieved in time, and that much greater levels of warming should be anticipated. The impacts of this level of warming would be catastrophic to ecological and human systems.

Warming is occurring everywhere, which has profound consequences. This raises the issue of responsibility for polluting and the 'polluter pays' for adaptation principle which some developing countries are advocating.

Some adaptations build capacity for resilience, and some tend to reduce overall resilience in a social and ecological system in which they take place. Many adaptations may be positive in the short term for the climate impacts being experienced, but may reduce long-term social resilience. Adaptation is limited by the ability of individuals to conceive of and act on the risks that they face. This is affected by individuals' perceptions of their own vulnerability and of their adaptive capacity.

People rely on social networks more than governments in situations of vulnerability and social networks enhance the ability to adapt. The most vulnerable are very difficult to reach and will find adaptation difficult.

Understanding the 'security' implications of these changes depends on the frame of analysis, whether state-based security or the security of individuals (human security). The key issues are

- Vulnerability and exposure to impacts
- Exercising adaptation options
- Having the rights and ability to adapt

## *Morning Keynote: EU policy on climate change and security*

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**Helga Schmid**, Director of the Policy Unit at the Council of the European Union, offered the morning keynote presentation. She discussed the EU's report on climate change and security, and provided details of the follow-on policy work that has taken place, as well as future EU initiatives in this arena.

There were four conclusions from the EU's report on climate change and security released in March 2008:

- Climate change will impact security and we have no choice but to respond
- Climate change is not a security threat on its own, but it increases the threat that other drivers of insecurity will develop
- The EU has already been thinking of climate-aggravated security concerns
- The response to climate security threats must cover security, foreign and environmental policies

When talking about the security implications of climate change, the EU is trying to achieve three things:

- Open up new context in the run-up to negotiations for a successor to the Kyoto agreement
- Bring a new perspective on climate change, as the military and security establishment have insights and a way of thinking that can bring real value
- Stimulate more research, particularly regional impacts assessments that can form a basis for targeting EU policies

The EU is working in four main areas that follow-up the report released in March: Firstly, spreading the message that climate change and security has to move to the centre stage of thinking about foreign policy.

Secondly, the EU is putting this issue on the agenda of all foreign policy dialogues with third countries. These discussions try to move from general to specific regional impacts, and address joint response strategies. The EU is engaging in more detailed regional studies on Africa, Central Asia and the Middle East. The EU is using political links to work out how EU can help and raise awareness in these countries at a very early stage.

Thirdly, the Policy Unit is working to promote broader thinking within the European policy community, continuing to promote a broader definition of security in keeping with the 2003 security strategy's human security paradigm.

Lastly, the EU must be prepared to do more, such as deploying military forces to trouble spots. Climate change will increase the need for stabilisation missions, with an emphasis on deploying civilian expertise alongside peacekeeping, and maintaining commitment for the long term.

One key issue is to translate analysis into practical policy. Another is to try and change foreign policy actors' way of thinking about security and environmental policy, with the aim of understanding how to better link up these issues.

## *Session Two: Defence in a Changed Climate*

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This session addressed the implications of climate change for defence planning and procurement. Climate change will affect future security operations and in order to maintain capabilities, defence must look ahead at the impacts of climate change on its personnel, equipment and estate. Because of the timescales involved, climate risk assessments must be undertaken now to ensure military capabilities are preserved. This session discussed current initiatives underway within the British military.

**Clive Murgatroyd OBE**, Lecturer, Defence College of Management and Technology, Shrivenham, discussed how climate change projections would undermine current Defence Planning Assumptions (DPAs), which form the basis of defence planning and influence defence capabilities development.

### *Defence in a Changed Climate*

The presentation examined a selection of military tasks, identifying where climate change could affect DPAs and where actions to rebalance capabilities may be necessary. These include:

- Providing strategic intelligence concerning climate change effects, particularly on vulnerable populations, to inform early action on conflict and humanitarian situations
- Monitoring the impact of climate change on overseas territories and base areas, as climate change effects may compromise the liveability and habitability of these locations
- Anticipating an increased demand for humanitarian operations and assistance, with peacekeeping and post-conflict operations becoming particularly important
- Using UK forces provided for defence diplomacy to assist the work of other government departments in building confidence and security as climate impacts develop

However, conventional threats are unlikely to diminish, and therefore traditional war fighting capabilities will continue to be needed, under harsher conditions and with limited fossil fuel access.

The tempo of operations in a climate-stressed future is likely to be continually high. The emphasis will be on delivering lower-order strategic effects through a comprehensive approach, preventing crises, setting secure and stable conditions to bring situations under control, and actively restraining the spread, duration and influence of climate-induced crises.

### *Defence Acquisition*

Defence must assess risks of climate change as far into the future as possible to ensure the delivery of capabilities, and to adequately inform future force structures and major capital investment decisions.

Defence strategic guidance will need to look further than strategic trends and incorporate planning assumptions that reflect the likely scale and concurrency of future operations by analysing IPCC scenarios from a defence perspective, and testing current and future capabilities against scenarios that take climate change into consideration.

The Ministry of Defence are developing an energy strategy and climate change strategy to bring the UK armed forces in line with Kyoto targets. Alternative fuels and propulsion systems are being explored through defence technology plan, although they will not be delivered in the near future.

### *Defence Adaptation*

The UK Climate Impacts Programme (UKCIP) has developed 'principles of good adaptation' which could be applied to defence acquisition. These include:

- Understanding risks and thresholds
- Managing climate and non-climate risks using a balanced approach
- Framing and communicating SMART<sup>2</sup> objectives and outcomes
- Using adaptive management to cope with uncertainty
- Avoiding actions that foreclose or limit future adaptations

Extreme events could expose political and military weaknesses. There is a danger that they could so overwhelm decision-making that increasingly inappropriate actions are taken - or no actions at all - which would paralyse the ability to adapt.

Defence must optimise its adaptive capacity by developing the ability to adjust to climate change, including climate vulnerability and extremes, to moderate potential damages, take advantage of opportunities, and cope with the consequences.

This will require:

- Sustainable infrastructure that is resilient to climate extremes
- Manpower that is equipped and trained appropriately for future military tasks
- Logistics support that is less reliant on fossil fuels
- Organisations agile enough to pre-empt climate impacts and take timely decisions

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<sup>2</sup> Specific, measurable, achievable, results-oriented, and time-bound

- Equipment designed for operation in extreme climates, with sufficient platforms to maintain presence and deliver lower-order strategic effects
- Rapid conceptual and doctrinal development that represents the most up to date climate risk assessments

Risk assessments are needed, followed up by decisions on how to manage the risks. From the initial concepts stages to delivery of military capability can take many years, therefore action needs to be taken now to ensure that the armed forces will be structured, resourced, and sufficiently adaptable to face the uncertain challenges that climate change will pose.

### *Session Three: National Intelligence and Strategic Trends*

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The third session provided insight into the use of national intelligence instruments and strategic trends forecasting in the creation of climate threat assessments from the US and UK governments.

**Major General (Ret) Richard Engel**, Deputy National Intelligence Officer for Science and Technology, US National Intelligence Council (NIC), outlined the objectives, methodology and findings of National Intelligence Assessment on climate change and US national security released in 2008.

Because climate projections involve physical science information beyond the traditional remit of national intelligence services, the Assessment focused on mid-range Intergovernmental Panel on Climate Change (IPCC) scenarios. It was targeted on approximately 50 states with the potential to impact US security interests. It defined climate change as a threat to national security when it degraded any of the elements of national power: Geopolitical, military, economic, or social cohesion of the US or other societies.

Some analysis of the connection between climate change and national security had been done by think tanks, and the NIC involved outside think tanks to analyse and integrate some of the information. The work assessed security impacts on an individual state level, compiling state-specific data on water scarcity, climate vulnerability<sup>3</sup> and sea level rise (including storm surge vulnerability). These security impacts were then reviewed by regional experts from the intelligence community, and the NIC elected to report on a representative set of states where climate change effects were significant.

#### *Findings*

Overall the report judged that global climate change will have wide-ranging implications for US national security interests over the next 20 years because it will aggravate existing problems—such as poverty, social tensions, environmental degradation, ineffectual leadership, and weak political institutions—that threaten state stability.

However, climate change alone is highly unlikely to trigger failure in any state by 2030. It will potentially contribute to intra- or, less likely, interstate conflict, possibly over access to scarce water resources. With water becoming scarcer in several regions, cooperation over changing water resources is likely to be increasingly difficult within and between states, potentially straining regional relations.

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<sup>3</sup> Climate vulnerability was defined as temperature index divided by coping capacity.

The intelligence assessment identified three principle paths through which climate change would adversely impact national security:

- *Changes in water availability* which in turn would drive migration of people first within states then potentially between states
- *Changes in agriculture productivity* caused by a combination of climate factors (temperature, precipitation) that would drive migration
- *Damages to economically significant infrastructure* from extreme weather events, particularly along coasts

Migration was identified as one of the major stressors, as economic migrants will perceive additional reasons to migrate because of harsh climates, both within nations and from disadvantaged into richer countries.

The United States will be less affected and better equipped than the vast majority of nations to deal with climate change, and may even enjoy a slight net benefit from climate change over the next few decades largely due to increased agricultural yield; however, infrastructure repair and replacement, emissions mitigation, and emergency response will be costly.

Sub-Saharan Africa, because of its limited coping capacity is the most vulnerable region to the impact of climate change, with resulting challenges to its economic development and political stability.

However, such dire scenarios are not inevitable even with worse than anticipated climate change impacts. Economic development, the spread of new technologies, and robust new mechanisms for multilateral cooperation to deal with climate change may foster greater global collaboration.

As climate changes spur more humanitarian emergencies, the international community's capacity to act will be increasingly strained. Among other consequences, the demand of potential humanitarian responses may significantly tax US military transportation and support force structures, resulting in a strained readiness posture and decreased strategic depth for combat operations.

Multilateral policymaking on climate change is likely to be of a high visibility and growing priority over the coming decades. This will increase pressure on the US to comply with policies and help others mitigate and adapt to climate change through technological progress and financial assistance.

**Chris Parry**, former Director of the UK Ministry of Defence's (MoD) Development, Concepts and Doctrines Centre (DCDC) gave an assessment of how climate change is viewed as a security threat, particularly in relation to other drivers of instability.

Climate change was identified by the DCDC's Strategic Trends 2007-2036 report as one of three main drivers of global change, along with globalisation and global inequality. These three drivers were given equal importance, and the effects of all three are uneven and unpredictable. The DCDC's forecasts identified multiple stress zones around the world: areas vulnerable to water stress, population growth, crop decline, hunger, coastal risk from sea level rise, and a history of recent conflict. When mapped, these problems overlay the same areas, indicating that these areas would be vulnerable to instability even without the effects of climate change.

This indicates that integrated policies are required which deal with multiple drivers of instability, and that it is useful to track strategic trends together, rather than segregating them by issue, and to pursue global as well as local solutions.

In order to provide solutions to these problems, Mr. Parry offered four 'Cs': contain the symptoms, consolidate what works well, collaborate much more between traditional remits, and promote charity to address global inequality, which is as significant as climate change in creating instability.

## *Session Four: Ministry of Defence Responses to Climate Change*

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**Derek Twigg MP**, Parliamentary Undersecretary of State for Defence, gave an overview of the MoD's approach to climate change as a security threat, and outlined the MoD's forthcoming climate change strategy.

The MoD recognises that climate change is set to threaten long-term global stability and will have a crucial effect on defence operations of the UK and its allies in the future. These effects must be dealt with on tactical as well as strategic levels.

On a tactical level, defence must seek out ways to adapt to these changes, including adapting equipment to operate in extreme conditions. Troops will face greater physical hardship, as climate change will add to the combat stress faced by the armed forces.

On a strategic level, climate change will amplify instability. The UK National Security Strategy states that climate change is a driving force behind threats, including resource conflict, regional tensions, and humanitarian crises.

### *UK Ministry of Defence Climate Change Strategy*

The UK MoD climate change strategy will identify, monitor and assess the risk of climate change.

The first focus is to understand impact of climate change on areas of UK interest. Work is underway within MoD to combine defence intelligence with UK Meteorological (Met) Office climate modelling to judge the risk of future instability in particular regions of interest. This allows better prediction of future theatres of operation, which in turn affect procurement choice and wider defence planning.

Military equipment must be adapted to future conditions including temperature extremes. The MoD strategy is concerned with adapting but also reducing its contribution to climate change, through moving to a low-carbon military.

There will be a greater demand for a range of military operations, including humanitarian operations, assistance in peacekeeping and post-conflict reconstruction, capacity building in the security sector, and support for stabilisation and development of regions affected by conflict. Additionally, conventional military presence and reach may need to extend further, such as into the Arctic.

The MoD's perspective is that it must do all it can immediately to mitigate the effects of climate change. Defence has special abilities in this area, including a range of science and technology skills. The MoD must act immediately to

understand the effect on equipment and assure the ability to operate in much broader range of conditions.

Climate change is no longer a debate but reality with severe implications. It is a long-term danger that must be tackled head-on, and failure to do so could undermine missions in the future.

## *Session Five: Mitigating Security Tensions in the Arctic*

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Security tensions that are surfacing around a changing Arctic are perhaps the earliest and most visible example of how climate change will impact the geostrategic interests of industrialised nations. This session examined some of these tensions, and discussed an initiative currently under development between RUSI and Cambridge University's Arctic Ocean Geopolitics Programme to foster a more open dialogue between Arctic stakeholders to address security tensions.

**Professor Paul Berkman**, Head of Cambridge University's Arctic Ocean Geopolitics Programme, opened the session by discussing the contrast between nation-state governance and the governance of international spaces. Seventy-five percent of the Earth's surface is legally defined as international space, while twenty-five percent is of the Earth is under the jurisdiction of nation-states. He proposed that a new security paradigm is appropriate in terms of distinguishing nation-state interests from international spaces and the governance strategies associated with both.

There are many security risks currently emerging in the Arctic, including environmental, cultural, economic, energy and national. The Arctic Ocean is transitioning from ice-covered to ice-free. There is no uncertainty about this change; in fact modelled sea ice extents have underestimated the rate of ice loss.

Interests are expanding as a result of this environmental state change. Stakeholders are positioning themselves to take advantage of emerging commercial opportunities, including oil prospects, shipping routes, and fisheries.

Associated with these expanding interests are a series of emerging risks, including risks associated with the escalation of military activities. The Arctic has been a heavily militarised region since the Cold War.

With these international stakeholders and interests, the risks have gone beyond the Arctic nations, and are the risks of the international community. However the risks are not being resolved by the international community in the Arctic, and the Arctic nations are not dealing with security issues in a collective, constructive, or collaborative manner. Existing Arctic cooperative bodies such as the Arctic Council do not deal with matters related to military security.

In May 2008 there was a gathering between the five Arctic border states in Ilulissat, Greenland, which resulted in the '*Ilulissat Declaration*'. The declaration did not directly address national security interests, but did identify that there is an existing international framework that applies to the Arctic, i.e. the UN Convention on the Law of the Sea (UNCLOS). The five arctic nations remain committed to legal framework of UNCLOS, and stated that there should be no new legal regime for the

Arctic. This implies that there is an accepted legal framework in place by Arctic nations, in the form of the UN Convention on the Law of the Sea.

There are three concrete steps to mitigating security tensions in the Arctic. The first is to redefine the geopolitical situation, the second is to establish common interests, and the third is to apply an approved legal framework.

UNCLOS can be used to redefine the situation of competing sovereignty claims in the Arctic. It codifies specific types of zones in the sea, identifying certain areas as Exclusive Economic Zones (EEZs), and other areas as 'high seas' beyond the jurisdiction of nations. The Arctic has a rim of exclusive economic zones, and at its centre is area defined as high seas, which is international space beyond the jurisdiction of nations.

A visual metaphor for the redefinition of the geopolitical situation in the Arctic is a 'donut', with the centre of the donut being international space as defined by UNCLOS, and the donut itself being divided between the jurisdictions of the five Arctic states.

The second step for mitigating security tensions in the Arctic is to establish common interests. The Antarctic treaty provides a model, where common interests were defined during the Cold War and the continent was designated an international space for peaceful purposes. As yet there have been no articulations of common interests in the Arctic; step two would be to identify these. If peace is a common interest and identified as such, it would set in place number of solutions to preserve Arctic as international space for peaceful purposes.

The third step would be to apply an approved framework. UNCLOS already exists, and the Arctic nations are committed to it. Furthermore, there is scope within UNCLOS to address security questions, as the Convention itself contains numerous references to security. UNCLOS makes a number of provisions for nation state as well as international space: in the central Arctic area beyond EEZs and the continental shelf there is international space, which effectively invites the international community to cooperate in solutions of governance.

Looking into the future, the types of solutions that are set in the Arctic will set a precedent for how issues are resolved in the rest of the world, 75% of which is international space.

## *Session Six: Strategies, Structures and Actions for Substantial Moves Forward*

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This session explored new directions in security thinking which have relevance for the response to climate change. It considered the potential scope of climate-driven insecurity, and the role of the security community in responding to those possibilities.

**Nick Mabey**, Director of the sustainable development NGO E3G, elaborated some of the content of the RUSI Whitehall Paper *'Delivering Climate Security: International Security Responses in a Climate Changed World'* which he authored. His presentation addressed four topics:

- Understanding security responses to climate change
- Motivating security actors in the mitigation discussion
- Responding to geopolitical challenges and opportunities
- Security reform in a climate changed world

### *Understanding Security Responses to Climate Change*

Current climate analysis generally assumes stability, rationality and internal equity. However, this may not be the case in practice, as successful adaptation to climate change will be fundamentally challenged by borders, existing property rights (e.g. water) and vested interests. Poor governance systems - especially communally controlled resource management - will amplify climate change impacts not damp them, and the impacts of climate mitigation policies (or policy failures) will drive political tension nationally and internationally.

In addition, the past may not provide the best guide for the future when assessing the risks of climate change. Climate change will alter the broad strategic context for security policy on many levels, such as:

- strategic interests
- alliances
- borders
- threats
- economic relationships
- comparative advantages
- the nature of international cooperation
- the continued legitimacy of the UN

Security policy will need to move to a preventive, risk based stance - not a reactive approach; there is no time to learn by doing. Responding to climate change will require greater investment in information systems, preventive capacity/capability, and comprehensive operations.

The current analysis of the risks of climate change concludes that the costs are high, but that climate change does not pose an existential threat. However, this analysis generally does not include many of the most extreme impacts of climate

change such as glacial and ice sheet melting, the dieback of the Amazon, or the release of methane from thawing permafrost. Therefore in order to remain within manageable climate change, the most pressing security issue becomes avoiding reaching these climate 'tipping points'.

#### *Motivating Security Actors in the Mitigation Discussion*

The security community has experience with preparing for worst case scenarios, and therefore has a better understanding of the potential risks of climate change. Current climate change politics and policy does not adequately reflect credible worst case scenarios. Therefore the security community has a role to play in communicating the security consequences of worst case scenarios to decision makers, and emphasising that there are no hard security solutions to managing climate change risks.

#### *Responding to Geopolitical Challenges and Opportunities*

This threat presents both challenges and opportunities in a geopolitical context. Climate change could drive a more collaborative approach to international relations - extending to areas such as energy security, conflict prevention, and development. However, climate change could also exacerbate tensions between and within countries, leading to a politics of insecurity as countries focus on protecting themselves against the impacts.

#### *Assessing the Threat of Climate Change*

There are different levels of analysis involved in assessing the threat of climate change:

- Geopolitical (impacts on country interests, international relationships)
- Strategic (impacts on national growth and development, country and regional stability and conflict)
- Operational (impacts on assets and investments - military and development)

The most challenging of these is operational, as broad-brush pictures of the geopolitical issues are possible to formulate. However it is more difficult for practitioners to use that information to decide between different courses of action. Therefore the next practical direction for analysis of climate change and security is toward providing information that allows choices and decisions to be made.

#### *Security Reform in a Climate Changed World*

Security reform is essential to prepare for a climate changed world. In many areas traditional resource governance systems will be unable to cope with the increased stresses of climate change, resulting in conflict and crisis over resource access. There is a need for an increased focus on prevention, as climate change is another serious stressor in already unstable countries, regions and communities. Adequate responses imply a greater focus on governance, resource management, and local conflict resolution capability.

However, a key issue is providing analysis to practitioners allowing them to prioritise these interventions. The biggest gap in the research and modelling community is integrated analysis of how climate change, energy security and resource use interact with economic development on a dynamic basis. New analytical developments are needed in order to understand these dynamics and anticipate crises.

**Major Shannon Beebe**, Senior Africa Analyst for the United States Army, gave a presentation which explored the ‘human security’ paradigm. He contrasted African and Western conceptions of security: the West defines its security based on systems - a cold war paradigm, focused on defining real-world, kinetic-based threats. In Africa, his research found that key concerns centre on security sector reform, poverty, health and environment, including climate change.

Security in the 21<sup>st</sup> century will be defined by creeping vulnerabilities and conditions that will create threats which defy traditional security engagements. Climate change is a non-traditional security threat which can be ignored by the defence community as being something outside of their remit. There have been four major reports released recently saying that climate change has security implications, but there has not been a lot of resonance within defence because the language is not there. What is needed is to change the security paradigm to understand conceptual framework, have paradigm we can use to incorporate these threats.

The human security paradigm provides this framework. But how do we define human security?

- It is the security of individuals and the communities in which they live
- It embodies material, environmental, economic and communal security
- It blurs the traditional distinction between domestic and foreign security

Protecting human security is about prevention and being proactive before security situations develop, and allows for inclusive engagement, such as breaking down the barriers between the NGO and security communities.

Complex threats and vulnerabilities require complex solutions. Solutions in one area impact solutions in other areas. The military can play a positive role by working with militaries in affected areas to prepare them for climate impacts, and on non-kinetic activities in support of their populations.

## *Closing Keynote Address*

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The UK has been at the forefront of joining climate change with security on a conceptual and policy level, to raise awareness and push responses forward both domestically and internationally. The closing keynote looked at the climate security issue in the wider context of recent world events, and highlighted the ways that this issue points toward progressive directions in security and foreign policy.

**John Ashton**, UK Foreign Secretary's Special Advisor on Climate Change, stated that security in the future will depend on the success or failure of our efforts to achieve 'climate security' and energy security at same time. What is needed is a greater motivation of financial, political, technological resources than it took to win the Cold War. That mobilisation has yet to begin, and it needs to begin in industrialised countries. This restructuring is equally vital for economic prosperity and national security.

In South Asia, multiple stresses are increasing competition for water and land use, and sea level rise endangers populations and coastal infrastructure. In China, climate change will greatly intensify existing anxieties about water, energy and food. There is no hard power response to this dilemma. In order for China to decarbonise its growth, industrialised countries must break from the 'business as usual' path.

All current security challenges will be more difficult in a world grappling with unmitigated climate change. Livelihood contraction; population displacement; more intense competition for food, energy and land; and a higher risk of state failure and political instability all have the potential to spread a sense of grievance and disenfranchisement. These are risks which must be assessed and responded to.

Transitioning to a low-carbon economy is essential in order to provide stability and security in the future. This will only happen through a closer engagement between the community of thinkers, strategists, policymakers, politicians who focus climate, energy and security. This engagement will require non-traditional alliances, partnerships and cooperation.

There are no hard power solutions to the challenges of climate change. A failure to use soft power effectively to drive mobilisations will present many more hard power problems on scale quickly become intractable. In this case, the security community will then be on the front line in an impossible position. Therefore the security community must engage their voices in a serious and sustained way to those arguing for a step-change in our low-carbon effort.