

annual conference 2022

climate change & (in)security project



key take-aways

The Climate Change & (In)Security Project's Annual Conference 2022 was co-hosted with the UK Ministry of Defence Climate Change & Sustainability Directorate. With the theme of 'Responding to Climate (In)Security: The Role of Defence', the 2022 conference brought together subject matter experts from across academia, Defence, and civil society.

'The implications of climate change include drought, soil erosion and marine environmental degradation. These can lead to famine, floods, loss of land and livelihood, and have a disproportionate impact on women and girls as well as on poor, vulnerable or marginalised populations, as well as potentially exacerbate state fragility, fuel conflicts, and lead to displacement, migration, and human mobility, creating conditions that can be exploited by state and non-state actors that threaten or challenge the Alliance' (NATO Climate Change and Security Action Plan)

Prior to climate change being highlighted as a security threat by the United Nations Security Council in 2007, the environment and security interface had been the subject of academic research since the 1990s. It was noted during the conference that despite over three decades of evidenced concern, climate insecurity has not received the necessary responses from policy makers. This has left the UK and its allies more vulnerable to climate threats and hazards. There was credible consensus that policy makers should act now to scale urgent mitigation and adaptation responses in order to maintain national security, economic prosperity, and human wellbeing. Further delay by policy makers is likely to directly compromise our collective security and greatly increase the probability of irreversible climate change tipping points being reached.

The lists of key takeaways and policy indications below are those outlined at the conference.

LOUISE SELISNY,
TIM CLACK,
MATT INCE,
CHRIS HODDER,
DUNCAN DEPLEDGE,
TRISTAN BURWELL,
THAMMY EVANS,
RICHARD NUGEE,
LOGAN WILLIAMS,
AND ZIYA MERAL *

*THIS REPORT REPRESENTS THE VIEWS AND RECOMMENDATIONS OF THE CONFERENCE PRESENTERS AND THE AUTHORS - THE LATTER IN THEIR CAPACITY AS MEMBERS OF THE CLIMATE CHANGE & (IN)SECURITY PROJECT TEAM.

Key climate security take-aways:

- climate change is a serious and urgent threat to (inter)national security, exacerbated by outdated path dependencies that divert resources and focus away from optimal responses;
- global heating will increasingly impact human systems, resulting in agricultural failure, mass migration, and economic decline, with subsequent implications for defence and security (including increased intra/interstate conflict);
- transition to Net Zero across Defence (and beyond) should be prioritised;
- coordination and collaboration across nations and networks is essential – ‘who shares wins’ – which is already a strategy being developed by competitors;
- an integrated ‘initiative mindset’ that facilitates urgent action and cooperation across Defence, Development, and Diplomacy is crucial;
- there is a need for a ‘whole-of-system’ response with a focus on solutions and cooperation across Domestic, Defence, Development, and Diplomacy policy and action;
- an understanding of systemic risk and global polycrisis, as well as the futures and foresights tools available to analyse them, is key to enhancing climate security;
- inclusive and locally led, indigenous centric responses to climate change, with fairly funded capacity building support from the international community are vital in mitigating certain security risks; and
- given the scale of the challenge, we need to urgently adjust our military and civil contingency planning, preparation, and perspective in order to enhance our resilience moving forward and decision advantage over time.



Contextual Introduction: Dr Tim Clack, Director, Climate Change & (In)Security Project

The Contextual Introduction by Tim Clack reasserted the International Panel on Climate Change (IPCC) recognition that the threat posed by climate insecurity is severe. Clack highlighted the urgent need to deliver the right responses, and highlighted the current delta between policy maker pledges and action. Clack pointed to specific examples of escalating threats to agriculture and food security that will exacerbate and precipitate famine, migration, and conflict. Emphasising the value of collaboration, he asserted that, ‘when it comes to climate and security, its who shares wins.’

Clack presented the need for military preparedness in relation to increased Humanitarian Assistance and Disaster Response (HADR) and Military Aid to the Civilian Authority (MACA). Here, Clack listed the ever-increasing number of interventions by national militaries in Relation to climate hazards and impacts.

In listing the operations of over twenty countries in the past six months, he highlighted the global scale of current military climate change operations, and posited that this is an escalatory trend that is set to continue.

Opening Keynote: Mr James Clare, Director, Climate Change and Sustainability, UK Ministry of Defence.

The Opening Address by James Clare emphasised the need to develop a more nuanced understanding of the threat posed by emerging climate change hazards and risks. He underscored how climate change is shaping the physical and strategic operating environment of UK Armed Forces with, ‘profound operational implications across all domains.’ Clare advocated a ‘whole-of-system’ response, with urgent action across Defence, Development, and Diplomacy. In addition to food and water scarcity, he pointed to climate change induced humanitarian and economic crises that would erode capacity to respond to future and multiple shocks.

Clare highlighted that a disorderly transition could exacerbate tensions within and between states, including access to new technologies and resources deemed critical for the decarbonisation transition. He described climate change as a 'meta issue', against which all Defence related activity will take place and quoted the First Sea Lord, Admiral Sir Ben Key, who cautioned that, 'climate change is an, existential threat to all mankind that far outweighs in gravity and threat what man may be doing to fellow man around the world.' Clare declared the need for defence to urgently assess, anticipate, act, and adapt to meet the challenge of changing climate.

Assessing Climate Insecurity Within a Defence Context

Ms Olivia Lazard (Carnegie Europe) explained how climate change is reorientating great power rivalries with strategic competition that includes the weaponization of foundational economic resources such as energy, food and water. Lazard also discussed the scramble for 'rare earth' minerals within the context of renewables transition, highlighting how Russian forces have occupied Ukrainian sovereign territory that is rich with such deposits. Madagascar and the Central African Republic were two further examples that evidenced the increased presence of Private Military Companies (PMCs) such as Wagner in areas with a comparable abundance. Lazard emphasised the essential need to understand the systems rivalry emerging from the transition to renewables as it will include competition for resources as well as the potential for commodity shortages and supply disruptions.

Mr Chris Hodder (United Nations) discussed how climate change accelerates and amplifies drivers of state collapse and mass migration. He processed through a chain of causation that highlighted how

"climate change is an existential threat to all mankind that far outweighs in gravity and threat what man may be doing to fellow man around the world"



fragile communities would be compromised as land surface temperatures increase and livestock, such as goats, are unable to survive. Hodder also discussed the resulting defence and security implications, including increased organised violence and 'rent seeking'. In Somalia, for example, he described implications including militant groups asserting control over key resources, such as water and charcoal.

Ms Laura Birkman (Hague Centre for Strategic Studies) discussed the issue of financing necessary climate security transitions and considered the responsibilities for assisting those in urgent need. She also advocated optimising the benefits of climate change as a way to enhance transition. Birkman highlighted the geopolitical implications of climate change and how the impacts of climate hazards increase the potential for

conflict. In response to these emerging threats, Birkman advocated a focus on indigenous led adaptation that utilised lessons learned from localised contexts, tools and skills.

Dr Irene Mia (International Institute for Strategic Studies) discussed the proliferation of non-state actors' control over necessary resources, such as water. She posited the need to incorporate such non-state actors within governance and accountability frameworks, highlighting the existing work of the International Committee of the Red Cross (ICRC) and Geneva Call. Mia advocated for early warning mechanisms that could help to facilitate negotiated settlements on resources as a way to mitigate armed conflict. She also emphasised the importance of including non-state actors when creating sustainable solutions to climate insecurity.

[Anticipating Future Threats Through Foresight and Experimentation](#)

[Mr Paul Larcey](#) (Princeton University) described [complexity theory](#) and [systems thinking](#), and explained how a more nuanced understanding of these concepts within Defence could reduce fragility and increase resilience. He emphasised the need for policy responses that appreciate and incorporate the interconnected nature of contemporary life because, in short, the, 'complex interactions of components create new dynamics that cannot be explained solely by the behaviour of constituent components.'

Larcey described how the focus on the efficiency of global systems has inadvertently increased their fragility by removing the redundancy required to respond to climate shocks. He went on to analyse the '[mechanism of failure](#)' and how policy makers could be supported in predicting and responding to systemic risk more effectively, thereby reducing the potential climate change impacts on critical infrastructure, economic prosperity, and armed conflict.

[Ms Lucia Retter](#) (RAND Europe) discussed the ways futures and foresights research could enhance our predictive analysis and planning. She advocated the development of a robust methodology that could support decision making with actionable insights – prioritising options for action. She referenced a number of essential tools and techniques, including [Robust Decision Making](#) (RDM) and [assumption-based planning](#).

Retter highlighted the inherently multidisciplinary and collaborative nature of futures methods and how they provide a specific benefit to climate security decision making. She suggested that decision making should identify key trends and developments in order to develop possible futures and mitigations with a view to prioritising and testing actions.

Retter underscored the importance of incorporating technological solutions that balance barriers to implementation with impact. She also emphasised the need for multidisciplinary and collaborative solutions to climate insecurity.

[The Honourable Sharon Burke](#) (Ecospherics) discussed the need for a more integrated and holistic approach to climate security. Burke posited that current frameworks fail to optimise support for governmental decision making, as outputs such as global trends, climate intelligence and horizon scanning reports do not currently feed into a coherent decision-making matrix. Such tools may provide a variety of information, but not necessarily actionable information.

"complex interactions of components create new dynamics that cannot be explained solely by the behaviour of constituent components"

Burke referenced ways to incorporate climate security more effectively into defence architecture, including via bespoke climate security-based wargames, or the incorporation of climate security factors into the statutory required US wargames. Burke pointed to the mainstreaming of substantial corporate investment into climate change, suggesting that it indicated that national governments should also be taking the issue more seriously.



"an initiative mindset is needed in the fight against climate change"

[Acting to Increase Climate Security Literacy and Strengthen Preparedness](#)

[Mr Laurie Laybourn-Langton](#) (Chatham House) underscored the need to develop an 'initiative mindset' in response to the increasingly chaotic conditions being created by the climate crisis. He highlighted how the average age on Earth is currently 31 years and that the emerging leaders of the 'Millennial Generation' will require skillsets that prepare them for the transition to Net Zero – a target that sits well within their working lives. By default, their careers will be dominated by themes of transformational change. In a similar light, he referenced his [Cohort 2040](#)

project that is developing more effective tools of communication and situational awareness for those individuals who, by default of their age, find themselves in pivotal positions to delivering transition to Net Zero.

The central plank of Laybourn-Langton's presentation highlighted the need to appreciate the complexity of climate insecurity, and understand concepts such as cascade risk and the potential for sustainable transition to be hampered by destructive feedback loops. He highlighted the interplay of physical, transitional, and cascading risks as creating a self-perpetuating momentum of destabilisation that will have impacts on all areas of policy. The outcome of the interplay of these risks will, he explained, create an overarching strategic risk that jeopardises a successful transition towards Net Zero.

Laybourn-Langton also referenced historic and future opportunities arising during the transition to Net Zero. From a Defence perspective, he suggested that the MOD is

well placed to respond to this period of significant flux given the range of baseline capabilities (including the ability to determine the narrative in chaotic scenarios), an ability to rehearse and therefore increase preparedness, and an inherent and absolute focus on mission delivery. Conversely, and when referencing planning, Laybourn-Langton suggested that the MOD could benefit from considering the holistic range of threats that will contribute to the aforementioned strategic risk.

[Dr Duraid Jalili](#) (Kings College London) discussed how the scale of implementation as regards climate change responses is dwarfed by the scale of the threat being faced. Jalili emphasised how the lack of agility within Defence is facilitating outdated path dependencies that divert resources and focus away from developing optimal responses to new and emerging threats. He explained that a lack of resource investment towards climate-related insecurity is ongoing despite a growing awareness and interest within militaries about the potential security ramifications that climate change will bring. At the heart of this lack of resourcing, according to Jalili, was the lack of content, time or space that those involved within military education are given to engage with and reflect on climate security.

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Jalili noted that the current materials used to teach wider security and leadership topics are devoid of environmental considerations, leading to a disconnect between what students are hearing about in wider security discourses and what the teaching materials are telling them. Although a problem faced globally by defence ministries, the discrepancy between the Global North and South was highlighted. The Global North typically defaults to known methods of education owing to a lack of time to produce alternative ones and the relative ease of continuing within a known apparatus and networks. The Global South is more likely to be constrained by financial and political motivations.



Jalili also expressed an urgent need for greater investment in 'Training Needs Analysis' at both the role-specific and macro level, as well as a more effective response to climate denial and scepticism. To catalyse the changes required and initiate a shift in the use of resources and Training Needs Analysis, Jalili said that climate change should be viewed as a positive unifying force to coalesce armed forces, governments and academia. By doing so, they could engage in collaboration to enhance training and education systems which, in turn, could enhance the preparedness of security forces worldwide. He cautioned that further delays and failures to commit adequate funds and focus would harden or close off potential options for solutions.

Brigadier John Clark (British Army) opened with a reminder that climate security is not only a consideration for the Global South but will have important considerations for the Global North's homeland resilience. He went on to introduce a range of current projects that the Army have implemented to consider themes of sustainability and climate security. 'Project Prometheus', with the objective of making Defence estates more sustainable, was highlighted as a success story and one that will see £200m invested over ten years. The first Prometheus project was opened, in 2021, in Leconfield, at a cost of £2m, with a life expectancy of 25 years. Clark explained that this initial site is expected to have paid by itself by 2028 in terms of energy savings. Clark also referenced 'Project Mercury' which seeks to increase electrification of the battlefield and reduce the logistical burden of deployment. He considered how operations could be shaped so as to protect the biosphere, as well as feed into a methodology that was more aware of cause and effect in relation to climate security. Clark emphasised that the UK military acknowledges officially the importance of climate security at the strategic, operational and tactical levels.

From an operational perspective, Clark spoke of the impact that climate change will have on the environments in which the UK's Armed Forces will operate, as well as the role that militaries will play – HADR was mentioned as one such role that may become more commonplace. Insight was also given to tactical considerations such as the increased difficulty of concealing Armed Forces within environments that have been altered by climate change and that such concerns are reflected in the British Army's



future capability development. When addressing directly the central theme of increasing literacy and preparedness, Clark highlighted the need for deep thought, working with allies (especially those in areas where UK Defence may need to operate), alignment with industry to bring de-carbonising and sustainable technology to market, and continuing with the experimentation and innovation that is woven into the Future Soldier programme. He closed by saying that efforts to align with the goals of sustainability and reduced emissions makes the British Army a more effective force.

Commander Andrea Cameron (US Naval War College) discussed the need to increase climate awareness and literacy across Defence but noted the difficulty that this presents. Cameron explained that if something is added into a field as congested as Defence education, then significant considerations result, including what is removed to make space and what specific elements linked to climate education are added. Cameron emphasised the need to embed climate literacy into doctrine at all levels of the military but stated that, not least given the limited capacity to accommodate insertions, there were pros

and cons for targeting different ranks with specific training. Furthermore, she underlined the need to consider how climate-related capabilities and specialisms are integrated into different military career paths.

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In addition to scientific research, Cameron underscored the need to incorporate individuals with policy experience and reach, as well as those with an understanding of military needs at the operational and tactical levels. Cameron spoke about the 'Climate Literacy Sub Working Group' that exists within the United States' Department of Defense, and the importance of such groups in institutionalising the issue of climate security and increasing future preparedness. A reflection of success in this respect would be the integration of climate into military training and, ultimately, doctrine. In order to mitigate against 'climate avoidance' and the feeling of being psychologically overwhelmed, Cameron advocated a focus on climate solutions as well as problems.

Lieutenant General (ret.) Richard Nugee (Non-Executive Director, UK Ministry of Defence) emphasised the need for optimism when responding to climate insecurity so as to resist becoming overwhelmed by the scale of the challenge. He advocated adjusting our planning, preparation and perspective in order to enhance our resilience moving forward and decision advantage over time. Nugee also underscored the need for prioritised and coordinated action, learning from inevitable mistakes as we go – as the urgency of the situation requires immediate responses to address climate insecurity. Within the context of the military providing appropriate support for peace building and stabilisation, Nugee distinguished between securitisation and militarisation of the climate space – securitisation being vital for ‘soft power’ agenda setting and (inter)national defence. He also urged policy makers to extend all available assistance to those in need, enabling them to build enhanced resilience and stronger governance, with a view to improving security in fragile regions where low-level climate conflict has already become endemic.



Professor Joshua Busby (University of Texas) highlighted the need for a robust methodology for climate security responses in terms of question framing, agenda setting and focused action. He discussed the different information needs for each stage and task in relation to supporting decision making and policy development. Busby pointed to hotspot and risk mapping, as well as the variety of predicative tools and instruments that could be utilised to improve assessments and promote decision advantage. He also used comparators to analyse why, for example, famine followed drought in Somalia, but not Ethiopia - namely,

increased state capacity and political inclusion as well as the judicious use of foreign aid to support targeted humanitarian assistance that focused on food security. Busby highlighted how early warning systems reduce mortality and overall exposure to climate hazards as well as the importance of locally led, internationally supported, mitigation and adaptation initiatives. Using the US Global Fragility Act as an example, Busby also underscored the importance of an integrated response to Defence, Diplomacy, and Development – the need for a multidimensional offer rather than discrete, siloed action.

Ms Erin Sikorsky (Center for Climate and Security) discussed how climate insecurity is shaping threats posed by our competitors. She referenced the new US National Security Strategy (NSS) that linked climate issues and transnational threats to the competitive environment. Sikorsky advocated utilising a climate lens in all geopolitical engagement and decision making as well as the need to fully integrate climate considerations across military operations and preparations. She noted that mainstreaming climate considerations was also important when analysing a competitor’s domestic stability, military

infrastructure, and economic decisions – facilitating a deeper investigation of motivations, particularly in relation to Net Zero transition and renewables. Sikorsky also advocated indigenous centric responses, but with capacity building support from the international community. Taking the comparative examples of Myanmar and Bangladesh presented by Busby, Sikorsky noted that Bangladesh deployed their disciplined military, directed by a coordinated government, in an effective response to widespread flooding. She also highlighted the strategic benefits of investing in climate responses in terms of developing strong allies and partners, and how competitors like China are already further ahead in terms of such regional alliances.



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Mr Alistair Harris (ARK) emphasised the need for a grounded and costed approach in responding to climate insecurity. In this regard, he highlighted the opportunities for pooled resources and joint working – focusing on what we can do with limited resources and with partners with even fewer resources. This would also involve developing a 'research and learning loop' that would allow to for more improvement. It would also prioritise assistance to those on the front line of climate change in order to establish and strengthen strategic alliances. Harris echoed the need for a robust methodology for decision making, both in terms of prioritising and intelligence gathering. He also suggested that a way to minimise cost and maximise impact would be to mainstream climate security across portfolios – developing a 'climate impact standard' across governmental departments. Harris underscored the need for education and training in order to develop competence as well as the need to enhance the social contract between militaries and the people they serve.

Closing Keynote: Ms Blair Brimmell, Interim Director, NATO Climate Change and Security Centre of Excellence

In the closing address, Blair Brimmell emphasised the vast scale of climate change and how the world and security are deeply interconnected. She noted

therefore that we are facing a truly global challenge, together. She emphasised the need for collaboration, and that our response must be universal, collective, and cooperative. Brimmell advocated for the promotion of universal security and wellbeing, as well as the pooling of efforts. She also highlighted how responses should be locally led as those directly affected develop a deep knowledge about sustainable solutions.

"responses should be locally led as those directly affected develop a deep knowledge about sustainable solutions"

Brimmell discussed the establishment of the NATO Climate Change and Security Centre of Excellence and how it will build essential and complementary capacity. The Centre of Excellence will also provide the Alliance with a better understanding and awareness of climate security, with a view to supporting mitigation and informing adaptation across NATO. The Centre of Excellence would lead on collating, assessing and sharing best practices as well as providing advice on mitigating whilst maintaining operational advantage. Brimmell also underscored the need for a multisectoral approach that created a military-civilian hybrid response to climate security.

Conclusion

Collectively, the contributors to the conference were clear that climate change is already impacting both natural and human systems around the world in ways that will significantly exacerbate food and water scarcity, displacement and migration, as well as humanitarian and economic challenges. In the short and mid-term, climate change disruptions will likely generate new geostrategic flashpoints and compounding cascade risks. In turn, these will likely result in both political and security risks, including increased inter/intra state competition and conflict. States must enhance their understanding of how climate change is shaping strategic and operational contexts, and urgently integrate climate security considerations into relevant analyses and decision-making.

Only comprehensive policy and action, that is adequately resourced, can maintain Defence and security provision in the medium to long term.

Key Climate Security Policy Indications:

- increased climate security policy, response, and action that is genuinely cross-party (and interdepartmental), delivered at scale and pace as a matter of urgency;
- increased climate security literacy, understanding, and competence;
- increased commitment to Net Zero initiatives;
- increased resources to maintain effective Defence capabilities in a climate changed world;
- increased multilateral and bilateral coordination and collaboration on climate security;
- increased climate security cooperation and integration across Domestic, Defence, Development, and Diplomacy, within the context of a wider 'whole of system' approach;
- increased domestic provision for the impacts of climate security shocks such as mass migration, agricultural failure, and economic instability;
- increased scale, diversity, and number of partnerships with nations and networks on the front line of climate change insecurity; and
- increased military and civil contingency planning and preparation to build resilience for expanded HADR/MACA intervention.

