Climate destabilisation and security

1 Executive Summary

On June 24, 2025, TMP and RUSI co-hosted a half-day, closed door event in Whitehall, London that looked at links between security and a rapidly changing climate. The event was attended by more than 120 decision-makers and experts from government, businesses and other key groups. Discussions from the event and proposed follow-up actions are described in this document.[1]

Risks and opportunities across the security environment[2] linked to rapidly escalating climate change[3] remain underappreciated by decision-makers in defence and beyond. The event **aimed** to evaluate how climate should be factored into security decision-making and strategy (while acknowledging that the boundary between defence and wider security is increasingly blurred and in need of clarification). The event launched work from TMP-RUSI and partners to shift narratives, mindsets and resource allocation through specific and practical recommendations.

Our **audience** included government officials (e.g., several UK departments), businesses (e.g., defence industries, mining companies, insurance companies), think tanks and philanthropies. The diversity of this crowd reflects the need for international, whole-of-government and whole-of-society responses to interacting climate and security challenges. It also reflects an appetite for better communication and coordination between defence and other key stakeholders.

The **agenda** for the event reflected the broadening scope of security. It started by framing the urgency of climate change and examining how it has been folded into security doctrine and practice to date. This led participants to consider how climate is contributing to qualitative shifts in the security environment that are still not well communicated – particularly with a view to urgency and interlinkage with traditional security concerns – within, or beyond, defence.

The **panels** (described in Section 2) then looked at possible strategic advantages for the UK and its allies linked to climate; the way climate should be factored into rearmament and defence spending; and how the demand for – and delivery of – humanitarian assistance and disaster relief will change along with climate. All panellists were speaking in a personal capacity rather than on behalf of their organisations.

Key takeaways from the panel discussions include:

- Delivering urgent and effective action depends first on our ability to focus multiple coherent narratives that speak to different audiences about the impact of climate change on key security decisions. One way to achieve that is by underlining the advantages and strategic opportunities that climate change can hand the UK and allies.
- Better information and crucially more appropriate presentation of it can inform military planning, capabilities enhancement and broader adaptation action.
- Cross-government and cross-sector engagement and coordination should be led by specific, resourced and prioritised goals. This can bring defence decision-makers into broader security strategy development, for example around energy security.
- Alleviating the pressures defence agencies will face from climate change will demand the deployment of other elements of national capability and security. This requires strategic integration of the subject to coordinate effectively between services, departments and sectors.

1 We would like to express our deep gratitude to all the panellists for their support and participation in the event. Several have also provided valuable feedback to help produce this document, which we very much appreciate.

2 In this readout we are using the terms “security” and “security environment” to describe a broad concept that goes beyond traditional “defence” (i.e. physical protection of the nation) by encompassing key elements of energy, supply chain, financial, health and resource security. We recognize that there are real challenges in determining what is out of scope and what is in scope for this view of security. But this broad definition is essential because of the way that both security and climate risks and opportunities are evolving.

3 The nature of rapid climate change was discussed and presented in the Keynote addresses, which underlined the rapid shifts that we are seeing in weather systems across the world.

In response to the event and subsequent feedback, TMP and RUSI are setting up a series of working groups. In parallel, we will execute a program of research and engagement that will both inform and be responsive to the recommendations of the working groups. These working groups – described briefly below and in more detail in Section 3 – will initially focus on the UK, but our program has international ambitions.

1 **Instability and geopolitical impacts:** This group will critically explore the ways climate shapes key security threats (e.g., organised crime groups and non-state violent groups) and strategic advantages (e.g., vulnerabilities of adversaries and rogue states), as well as the limits of its influence, with a view to:

- Specifying the requirements for better tools that militaries and other key stakeholders can use to identify and manage risks and opportunities.
- Crafting analysis and communications platforms that more effectively surface climate and security links and their potential second- and third-order implications.
- Developing evidence of, and recommendations for, security risk and opportunity management.

2 **Military capability and supply chain:** This group will investigate ways that climate change should be factored into defence spending. It will focus on securing supply chains and ensuring innovation across military and key dual-use industries, with a view to:

- Delivering recommendations on what should and should not be covered by defence spending and associated capability targets.
- Delineating the best deployment of public and private capital and capacity to deliver linked climate and security goals while empowering the financial sector on resilience.
- Identifying the best technology and industrial configurations to rapidly enhance military capabilities[4] for immediate climate-related threats while also supporting the enabling environment for ongoing resilience.

3 **Humanitarian assistance and disaster response (HADR):** This group will focus on how to meet the demand for HADR operations overseas domestically, expected to grow rapidly, while minimising the pressure they place on responses to wider strategic competition. Its key objectives will include:

- Assessing options and platforms to improve national and international preparation and response capability while minimising impact on defence capability.
- Enabling public and private collaboration to assess and map likely demand for HADR and to support effective capacity building and resource deployment.
- Supporting cross-government coordination on UK HADR and military aid to civil authorities (MACA), linked to key priorities such as securing supply chains for rearmament and building soft power.

4 **Homeland security:** Climate-related risks and tipping points may have a significant bearing on the stability and security of the nation and on its capacity to prosecute its security interests elsewhere. We should demonstrate these risks in specific terms for existing and planned assets for both the military and wider society. This includes:

- Building informed scenarios that show the immediate challenges and opportunities climate poses for homeland security (including tipping points in the financial sector and core elements of resilience such as health, food, water and energy security).
- Providing recommendations on the management of these risks that deliver broader benefits for both the UK public/civil sector and its military. What could or should we be doing to make the homeland more secure that we aren't currently doing?

Taken together, these working groups can deliver the specific recommendations and cooperation platforms that are urgently needed to reduce the risks and seize the opportunities that climate poses for the security environment.

If you want to join or support this process, please contact TMP Managing Director and Security Lead Ben Bowie.

2 Keynotes and Panels

The event started with keynote speeches from Rachel Ellehuus (Director-General, RUSI), Ajay Gambhir (Director of Systemic Risk Assessment, ASRA), and Lou Munden (Founder, TMP). These keynotes were followed by three panel discussions that explored (1) the strategic

4 Within this, we recognise that the UK has historically been good at R&D but less effective at exploiting and commercialising it.

advantages that climate could create for UK security, (2) how to factor climate challenges into rearmament and defence spending, and (3) interactions between climate impacts and the provision of humanitarian assistance and disaster response (HADR).

2.1 Keynotes

The keynotes highlighted the fact that security and climate change are interconnected and that challenges are compounding. Shifting weather patterns and climate conditions are feeding into rapidly evolving and complex strategic challenges, with persistent questions around critical infrastructure, resilience, decarbonization and the conduct of military operations. Examples of climate challenges were provided to highlight how they are changing the battlefield: soldiers operating in high temperatures; reduced flight times; increased fuel consumption; stressed vehicles; and storms impacting bases and critical infrastructure.

The scale of this systemic shift, and the speed at which climate change is accelerating, can be underestimated by defence and security decision-makers.[5] The keynotes did, however, underline the fact that climate and associated risk management can be areas of strength and competitive advantage.

Very rapid climate change may be underappreciated in the UK and allied countries but key adversaries like Russia are even more vulnerable, either because they are in active climate denial or because they are only communicating short-term positives. The impacts of this rapid climate change on adversary energy and transportation systems[6] could undermine their military capabilities and stability (see graphic below).

At present, allies might be in a better position than many adversaries[7] to recognize and take advantage of these increased vulnerabilities. But coordinated efforts will be required to develop capacity to exploit adversary weaknesses, identifying where and when opponents might be vulnerable, while mitigating our own climate-related challenges. This is something that TMP and RUSI would like to help address.

By starting to shift the narrative and underlining why climate change should be factored into defence and security decision-making, particularly in ways that respond to immediate and near-term operational and strategic challenges, the keynotes set the stage for the panels that followed.

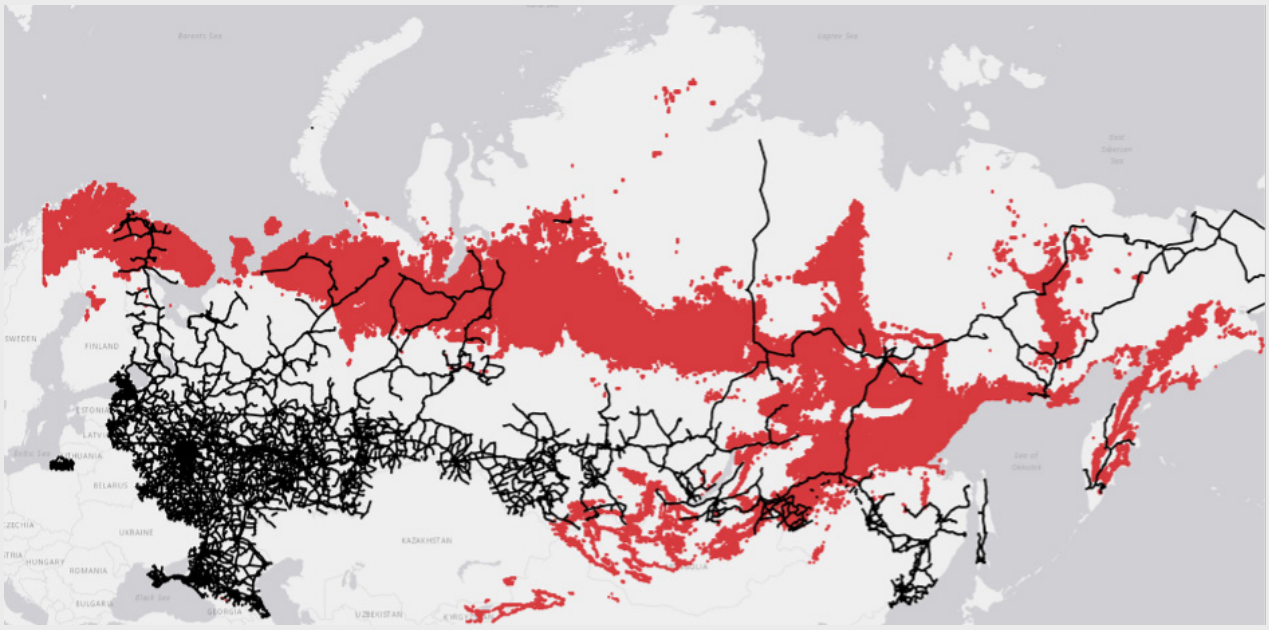

Figure 1: Key roads in Russia and red areas where melting permafrost may drive disruptions to transportation networks (Source: TMP analysis (red) and OpenStreeMap (roads))

5 Tipping points like the potential collapse of Atlantic Meridional Circulation Overturning (AMOC) merit further consideration, but these dramatic shifts are hard to plan for effectively and can distract from a near-term focus on the more gradual and insidious ways that climate change is already leading to deteriorating security conditions.

6 Specifically, increased severity and frequency of drought conditions could choke energy supply from water-intensive sources of generation (e.g. nuclear plants, which are typically quite old and vulnerable in Russia) while increasing temperatures could melt permafrost creating problems for road and rail infrastructure.

7 We recognize that some adversaries and rivals are paying attention to climate risks and adaptation strategies, so an evaluation of relative capabilities in this area is needed.

2.2 Advantages Panel

This panel was chaired by Dr. Duncan Depledge (Senior Lecturer in Geopolitics and Security, Loughborough University), who was joined by Emily Ferris (Senior Research Fellow, International Security Studies, RUSI), Iris Ferguson (Former Deputy Assistant Secretary of Defense for Arctic and Global Resilience, United States Department of Defense) and Brigadier Tim Symonds OBE (Head Climate Change & Sustainability, British Army). It was framed around questions including:

1. **Key geographies and challenges:** How might climate change contribute to strategic advantages, shifts and new areas of competition for the UK and its allies?
2. **Threat assessments:** How is climate change being considered in threat assessment and strategic planning? Does this need to change?
3. **Strategic readiness:** How can the UK and its allies manage the threats and seize the opportunities that climate change might contribute to? If so, what needs to change?

The panel picked up the suggestion that adversaries could overlook or mismanage climate risks, exploring it in the context of Russia and the Arctic. Panellists then considered the UK's capacity in defence and broader security to take advantage and exploit these weaknesses.

Panellists discussed the fact that Russia generally frames climate change as a positive force, citing food production in marginal areas as one example. But the country is exposed to significant climate risks that are harder to manage because they are denied or ignored.

Russia maintains dedicated military units that may be able to manage some challenges to transportation infrastructure caused by ice melting. But as environmental degradation and events such as wildfires grow in frequency and reach, climate-related impacts could impact adversaries' military capabilities and economic security in more strategically significant ways. In short, there are advantages connected to the way climate weakens adversaries that most defence decision-makers may be interested in learning about.

The Arctic is a common focus for "climate security", panellists explained, in part because melting ice and increased accessibility could create strategic advantages for Russia. Citing the example of Greenland, where mineral extraction remains commercially uncompetitive, the panel noted that these advantages could be hard to seize. At the same time, the Arctic shows how climate can drive collaboration between allies, leading to opportunities. In contrast, changes in the Arctic could strain Russia's relations with some of its few allies.

Next, the panel discussed the operational advantages that could be won by mastering transition technologies at the right time[8]. Integrating climate-related benefits into strategic decision-making will require framing them in the right language, panellists noted. If we can get this narrative right, the UK and its allies can use climate as an area of strength.

Audience questions prefaced the next panel on rearmament by exploring some of the challenges and opportunities around the supply chains (e.g., critical minerals) that will be required to harness the advantages discussed by the panel. There was general agreement that urgent and coordinated action was needed to secure supply chains.

2.3 Rearmament Panel

On the same day the UK Government released its National Security Strategy, and while NATO allies met in The Hague to commit to spending 5 percent of GDP on defence, this panel was Chaired by Ben Bowie (Managing Director, TMP) who was joined by Tom Burgess (Vice President, UK MoD Business Development, Rolls-Royce), James Clare (Director of Climate, Energy & Environment, Defence Green Network, Ministry of Defence), Victoria Doherty (Group Head Science & Technology Capability Engagement, QinetiQ) and Lieutenant Colonel Matthew Stott (Logistics Officer and PhD Researcher, British Army). It examined questions including:

1. **Supply chains and resilience:** Key supply chains for rearmament like critical minerals need substantial investment to be resilient. But what does achieving resilience mean in practice?
2. **Competition for fiscal space:** How should we link defence spending with other priorities in fiscal planning including industrial policy, low-carbon energy security and wider resilience to make them socially and politically sustainable while also responsive to immediate threats?

8 For militaries, adopting transition technologies too early will create challenges while waiting for too long will leave them at an operational disadvantage. There is a goldilocks zone for these technology shifts which can be hard to seize because of the long lead times of the relevant procurement processes.

3 **Procurement, targets and solutions:** How should procurement and the implementation of capability targets respond to the changing security environment for the UK and its allies?

Panellists described how the rapidly evolving climate and security environments change the landscape for, and evaluation of, capability enhancement and technology procurement. They looked at the need to revisit the concept of capability development with significant implications for the whole Defence Enterprise. Navigating these choppy waters, they said, demands a clear and specific view of the capabilities that must be developed.

It also challenges government and business to develop specific modes of cooperation that can foster an enabling environment for strategic readiness and interoperability. For example, the panel highlighted the importance of society-wide energy security[9] in delivering resilience, domestic security, economic productivity and effective rearmament. The weaponisation of energy security is a defining feature of the contemporary security context, necessitating a greater focus on energy dominance among NATO allies, said panellists. Defence spending targets recognise the centrality of energy but, again, we heard about the need for more extensive public-private partnership to deliver secure, clean and cheap energy for both defence and the nation.

Building on the importance of energy for resilience, the panel underlined that core resilience also covers food and water. Here, critical infrastructure and the financial architecture behind it need attention – and to be upgraded. These are cross-society challenges, so rearmament could be balanced against other ways of strengthening society against risk, especially where those mechanisms also connect with industrial policy.

Panellists then considered appropriate boundaries for defence decision-making and where diffuse challenges distract from central defence priorities. The panel agreed that rearmament must deliver broad benefits, not least to attract continued public investment. Again, the panel emphasized the importance of work on better and more compatible storytelling around security that can simultaneously engage the military, as a relatively "closed system", and the electorate, which finances it.

This means underlining the links between rearmament, industrial capacity, international collaboration and growth (including among SMEs), as recognized in the Department for Business and Trade's Industrial Strategy, published days before this event. The panel concluded by highlighting the importance of rapid action to seize the moment on rearmament. It also underscored the importance of a consistent approach to defence spending that can derive real benefits for resilience, industry productivity, capacity development and job creation with a strong focus on return on investment.

Figure 2: Rearmament Panel Discussion

9 This contrasts with energy security for defence, which requires attention but is already a priority for relevant decision-makers.

2.4 Humanitarian assistance and disaster response (HADR) Panel

The final panel of the day was Chaired by Jack Denton (Director, TMP) who was joined by Lt Colonel Stu Biggers (Directorate of Climate, Energy and Environment (CEE), Ministry of Defence), Andrew Hall (Divisional Director, Climate Risk and Resilience, Howden Group) and Bryden Spurling (Former strategist for the Australian Department of Defence). It was framed around questions including:

1. **Overburdening risks:** How can we balance HADR with other calls on military and defence capacity? Are there opportunities to link them together?
2. **Collaboration and coordination:** How should defence institutions plan for and work with other groups – including, for example, the private sector – on climate-related HADR? Who are the most important partners to consider, and what kind of collaboration is required?
3. **Pros and cons for militaries**: What are the incentives for defence institutions to increase their involvement in HADR operations? What are the risks?

The panel started by recognizing that rapidly escalating demand for HADR operations [10] – for example, through a continuation or intensification of current trends in natural disasters, armed conflict or forced displacement – calls for new forms of cooperation and alliance.

Cross-government implementation needs attention but there is also a call for stronger public-private partnerships in areas including HADR planning and delivery. While the focus was primarily on the UK, international cooperation and examples were noted, including how NATO's Euro-Atlantic Disaster Response Coordination Centre had functioned in the wake of flooding in Eastern Europe, and how Australia's response to bushfires improved collection and dissemination of more specific climate intelligence.

Humanitarian crises linked to climate and compounded by other conditions are now routine, impacting on increasing vulnerability and fragility. HADR is a growing security concern, the panel explained, because it is linked to supply chain challenges, global and financial shock, state failure, the proliferation of non-state violent groups and potentially large-scale migration. Climate provides a lens that can help us to forecast these trends, identifying the places most at risk and most likely to drive security concerns, including terrorism.

At present, the FCDO leads British HADR operations at the invitation of host nations, with the Home Office handling military aid to civil authorities (MACA) in the UK. But in practice, due to its unique capabilities, the military will be expected to contribute as provider of last resort. It is commonly accepted that this pressure will only grow as climate change worsens, when the military is also expected to be preparing for greater strategic competition.

Without increases in capacity, or efforts to make climate-vulnerable areas more resilient, the military could be overburdened. But by approaching force composition and civilian and private sector cooperation with a clear sense of these additional demands, opportunities exist for improvements in capacity, speed of response and effectiveness with multiple benefits.

The panel suggested, for example, that HADR deployment may be able to offer opportunities for force and equipment testing in live and extreme (though notably not combat) conditions. This provides another example of how climate-related security issues can be communicated in ways that are more appealing to military decision-makers. Similarly, emphasizing the substantial soft power benefits linked to HADR delivery could make it more attractive to security decision-makers. This, in turn, implies the need to show how these benefits are exploitable, and measurable, as a way of demonstrating return on investment.

The panel discussed how the changing nature of HADR demand calls for a different attitude and changes in the way military contributions are planned for and deployed. There is a compelling case for new platforms (even new dedicated agencies, although drawbacks were noted here) and improvements in collaboration, such as through sharing data on disaster risk. In this context, collaboration between defence and groups like insurance companies is critical.

Improvements in military capacity for domestic disaster response (through MACA) and international HADR operations should be accompanied by a focus on civilian and private sector cooperation – as well as on cross-government and society preparation and response – to

10 More frequent and severe natural disasters and humanitarian crises driven by interacting climate and geopolitical challenges do not necessarily result in an increase in the deployment of HADR operations, which remain fundamentally discretionary, and which are threatened by reduced aid budgets.

improve the value of investments in this area and incentives for appropriate action. The expansion of accompanying civilian and private sector support functions lowers the overall cost for HADR and MACA implementation while providing co-benefits in terms of soft power.

3 Paths forward

Based on the event and subsequent feedback, we have a platform that can advance the consideration and communication of links between climate and security. There is an urgent need to show how addressing these interactions leads to better outcomes.

To that end, TMP and RUSI have resolved to set up working groups of around 20 to 30 participants that can provide specific recommendations for key groups, communicated in ways that will resonate and persuade. In parallel, we will execute a program of research and engagement that will both inform and be responsive to the recommendations of the working groups.

The key themes for this initial set of working groups, outlined below, align with our panel discussions. We aim to hold our first in-person meetings in Q4. Our approach will focus initially on the UK. If our working groups are effective, we will evaluate ways to propagate counterparts among key allies.

In the meantime, we will implement a consultation with panellists, participants and other key stakeholders to determine the schedule of our working groups, their key objectives and the process/format which they will follow (including how working groups and their outcomes should interact and support each other). Initial discussions suggest a high degree of consensus, but we are committed to testing the key assumptions that have led us to these paths forward.

3.1 Instability and geopolitical impacts

This working group will critically explore the ways climate shapes key security threats (e.g., organized crime groups, non-state violent groups and mass migration) and strategic advantages (e.g., vulnerabilities of adversaries and rogue states), as well as the limits of its influence, with a view to:

- Crafting analysis and communications platforms that more effectively surface climate and security links and their potential second- and third-order implications.
- Developing evidence of, and recommendations for, specific actions that deliver risk and opportunity management.
- Specifying the requirements for better tools that militaries and other key stakeholders can use to identify and manage risks and opportunities.
- "Pricing in" resilience so that strong risk management and adaptation are rewarded by capital markets, which can also provide warnings of systemic vulnerability.

We expect this working group to comprise government, military, academia, defence service providers and think tanks. We understand that defence decision-makers perform wargames and similar exercises that focus on these topics, and would like to complement these exercises by providing a broader understanding of both the security environment and actions militaries can take to intervene in it. For this reason, we are likely to expand this group to include other key interested and capable groups, for example industry and financial institutions. This step will be taken once we have developed a coherent work program and a high degree of trust among government departments.

3.2 Military capability and supply chains

This working group will examine the ways that climate change should be factored into defence spending, with a particular focus on understanding the evolving characteristics of supply chain management, securing supply chains and ensuring innovation across military and key dual-use industries[11]. It will look to:

- Deliver recommendations on what should and should not be covered by defence spending and associated capability targets.
- Understand the risks to defence and national security from climate change, and whether efforts to more routinely factor these capabilities into strategy and capability planning would be useful.

Delineate the best deployment of public and private capital and capacity to deliver linked climate and

11 The term "dual use" is routinely used, particularly in defence decision-making to refer to technologies and capabilities that have both military and civilian applications. Climate accelerates a broadening of what could be considered dual use and so revisiting the definition of this term is important. For our purposes, it includes not just technologies and materials but also critical and enabling infrastructure, including energy and transportation.

security goals while empowering the financial sector to exert more influence in adaptation and capability enhancement.

Identify the best technology and industrial configurations to rapidly enhance military capabilities[12] for immediate climate-related threats while also supporting the enabling environment for ongoing resilience.

The group will recognize that the UK defence sector alone lacks purchasing power and must build cooperation across borders and sectors. Therefore, we expect the composition of this working group to be broad, spanning government, military (including centres of excellence), defence service providers and business (including financial institutions).

3.3 HADR

This working group will focus on how to meet the demand for HADR operations overseas and domestically, expected to grow rapidly, while minimising the pressure they place on responses to wider strategic competition. Its key objectives will include:

- Assessing options to improve national and international response capability while minimising impact on defence capability.
- Enabling public and private collaboration to assess and map likely demand for HADR and to support effective capacity building and resource deployment.
- Supporting cross-government coordination on UK HADR and MACA, linked to key priorities such as securing supply chains for rearmament and building soft power.
- Developing platforms for international cooperation on HADR that build on comparative advantages.

The composition of this working group will likely start with government departments, including the FCDO and MoD. We expect it will later expand to include the corporate risk and insurance industry, academic institutions, UN authorities, key civil society actors and others.

3.4 Homeland security

Homeland security was a cross-cutting theme in our panels. There remains a persistent perception among some senior decision-makers that the UK is largely insulated from the most severe consequences of climate change. It is imperative that we communicate the reality: that we are increasingly exposed, both directly and indirectly, to climate-related risks and tipping points. These have a significant bearing on the stability and security of the nation, as well as its capacity to prosecute its security interests elsewhere.

We believe this issue requires dedicated attention, with a particular focus on raising awareness of the challenges posed for the UK and ensuring adequate steps are taken to address them. We should demonstrate these risks in specific terms for existing and planned assets for both the military and wider society. This includes:

- Building informed scenarios that show the immediate challenges and opportunities climate poses for homeland security (including tipping points in the financial sector; core elements of resilience such as health, food, water and energy security; and direct challenges to the availability of the military estate, e.g., for training and deployment).
- Providing recommendations on the management of these risks that deliver broader benefits for both the UK public/civil sector and its military. What could or should we be doing to make the homeland more secure that we aren't currently doing?

We expect the composition of this working group to start with government departments, military and industry.

3.5 Next Steps

If you are interested in participating in our working groups, please reach out to TMP Managing Director and Security Lead Ben Bowie.

We welcome your feedback on this readout document – particularly on the working groups, their proposed objectives and key people or organisations that should participate. We will aim to communicate the final plans for our working groups by the end of September, ready for the first set of meetings in Q4 2025.

12 Within this, we recognise that the UK has historically been good at R&D but less effective at exploiting and commercialising it.