# CLIMATE AND SECURITY

## Perspectives from Finland's Comprehensive Security Model

**DISCUSSION PAPER**

Prepared for:
**"CLIMATE RESILIENCE AND SECURITY: REFLECTIONS FROM THE UK AND FINLAND"**
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We collaborate with local and national governments, international organisations, civil society, and companies to create the tools that will define this pivotal moment in global history.

Founded in 2005, we are headquartered in Finland but collaborate on projects globally. We are a community of about 70 curious and kind individuals from various backgrounds and expertise. We are predominantly project-funded and fully independent, without any party affiliations as an organisation.

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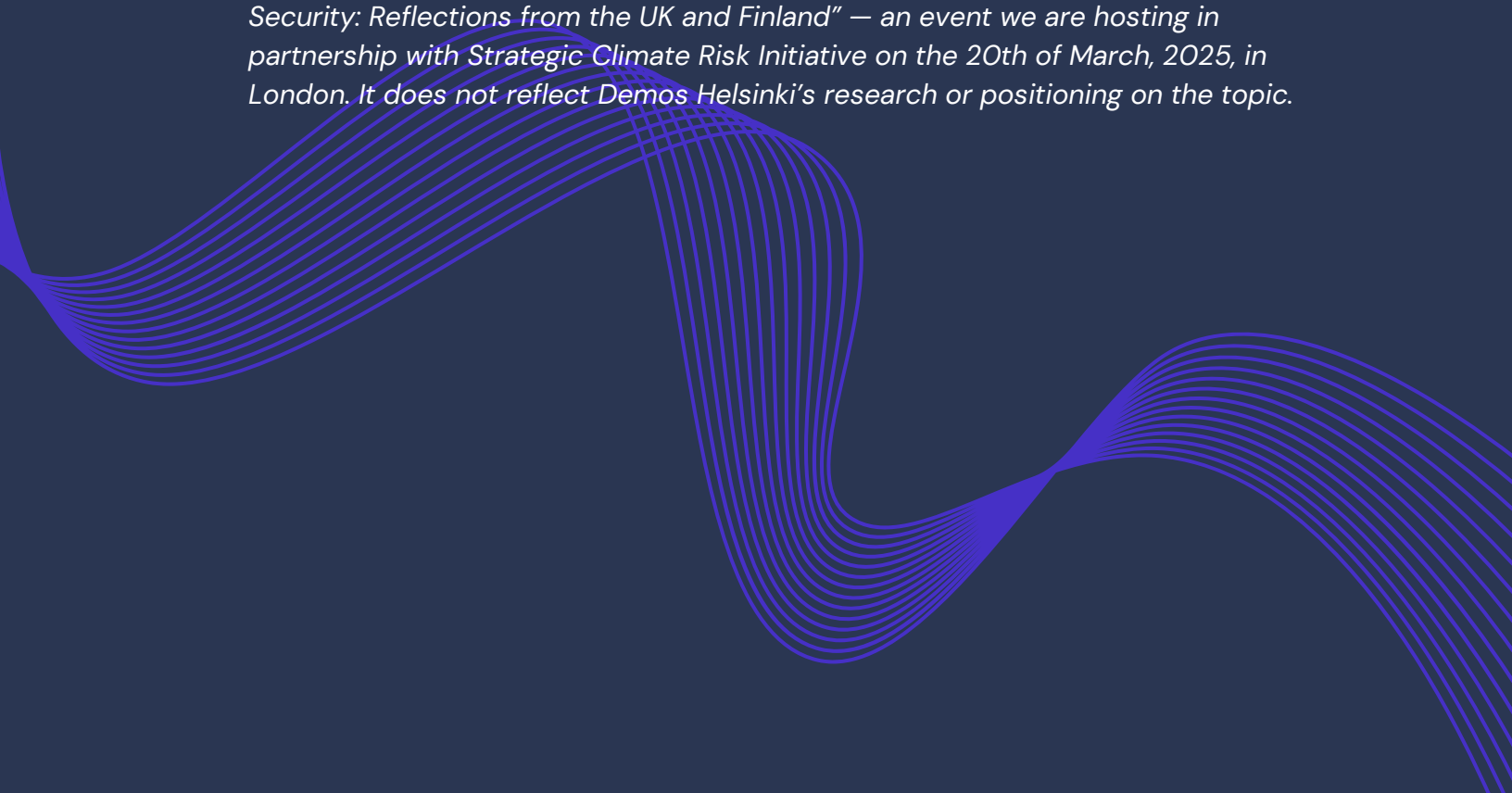
*This paper has been prepared as a discussion prompt for "Climate Resilience and Security: Reflections from the UK and Finland" — an event we are hosting in partnership with Strategic Climate Risk Initiative on the 20th of March, 2025, in London. It does not reflect Demos Helsinki's research or positioning on the topic.*



# Contents

# Executive Summary

Climate risks challenge traditional security paradigms focused on military threats against the backdrop of a stable environment. They can create cascading impacts extending into a host of domains, from economic stability and food security through to health and even international and domestic political stability. Nowhere is this clearer than in the case of tipping points: severe and irreversible shifts in the environmental system which have the potential to rupture all aspects of daily life and order.

A new climate reality requires a more expansive and adaptive approach to security that can adequately respond to these interconnected risks. Finland's Comprehensive Security Model (CSM) offers a unique, holistic framework that can provide lessons on what such an approach could look like. The model relies on cooperation across authorities, businesses, civil society, and individuals, and emphasises preparedness for a broad spectrum of threats, from natural disasters to hybrid threats, integrating security into the fabric of daily life.

This discussion paper details the Finnish approach to national security before contextualising it in the dual cases of the Covid-19 pandemic and Russia's invasion of Ukraine. It then derives a number of lessons which can be applied to developing a new institutional paradigm around climate security. These are:

- Creating and embedding an expanded, democratised concept of what security is and what it requires;
- Building shared analysis as a source of legitimacy;
- Combining democratic decentralisation and cooperation with central support to enable agile threat response; and
- The need to address the political as well as institutional demands of crisis response.

The threats to our security posed by climate change are potentially catastrophic. If we are to learn the lessons of the Covid-19 pandemic we cannot let ourselves be caught unprepared. Security institutions must be developed to integrate resilience into all levels of governance

and society. This institutional innovation is not optional. It is an essential adaptation to a volatile and uncertain future.

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*This paper has been prepared as a discussion prompt for "Climate Resilience and Security: Reflections from the UK and Finland" — an event we are hosting in partnership with Strategic Climate Risk Initiative, on the 20th of March, 2025, in London. The bulk of the writing took place before the release of Finland's 2025 Security Strategy for Society, and so the paper largely references the former 2017 iteration. However given the update has not led to hugely significant changes, we are confident the overall analysis still stands.*

# Introduction

The Covid-19 crisis demonstrated three important facts:

1. hostile actors are not the only source of national security risk
2. impacts can cascade across sectors, generating feedback effects spanning everything from public health to the economy and access to essential goods and services
3. we are far more vulnerable to these expanded risks than we previously believed

The world was fundamentally unprepared for the Covid-19 pandemic (Sirleaf and Clark, 2022), with analysis from the UK (Hallett, 2024) to the EU (Eerens et al., 2023) and beyond highlighting the urgent need to improve preparedness and response capacity for future non-military threats. Despite this, action remains limited. Instead, Russia's invasion of Ukraine has led to hard security[1] considerations becoming increasingly dominant above all else (European Defence Agency, 2024). This is understandable; the security implications of a more volatile geopolitical reality cannot be ignored. But it cannot mean the neglect of other non-agentic security threats. Otherwise, we risk inviting future crises which can wreak even greater havoc, death and destruction than the Covid-19 pandemic. This cannot be allowed to happen.

Nowhere is this risk greater than concerning climate breakdown. 2024 was the first year on record where the world's average temperature broke 1.5°C (Copernicus Institute, 2025). While this temporary transgression does not technically break the 1.5°C target of the Paris Agreement, the widespread consensus is now that the 1.5 °C target is beyond reach (Hirji and Ainger, 2024), with many IPCC experts now predicting a world of more than 2.5°C of global heating (Carrington, 2024). This would be nothing short of a catastrophe; even at lower temperatures, we are already seeing devastating impacts across the world. Events such as the deadly floods in Valencia (Hedgecoe, 2024) and devastating LA wildfires (FitzGerald, 2025) are made far more likely by climate change (Otto et al., 2024). Meanwhile, cascading, indirect

[1] Hard security has traditionally denoted external, military security threats.

impacts of climate events can threaten economic stability across the globe. Climate shocks are increasingly recognised as a major driver of inflation in the present (Kotz et al., 2024) and have been recognised as a severe risk to the financial system (Butler, 2023).

Even the worst present-day impacts are dwarfed by the security risks posed by climate tipping points. A tipping point is a threshold that, when crossed, can lead to large and likely irreversible changes in the climate system (Armstrong McKay et al., 2022). Two security-relevant features of tipping points are that their impacts are relatively *rapid*[2] and *extreme* compared with the understanding of climate change which predominates in most policy discourse. Climate change is usually understood as a slow moving, ratcheting process, gradually increasing in threat level over time. Tipping points do not follow this model, but instead can create abrupt discontinuity across the earth system and shift us into an entirely new climate paradigm. They are *nonlinear*.

One tipping point which is increasingly widely discussed is the potential collapse of the Atlantic Meridional Overturning Circulation (AMOC). The AMOC drives a flow of warm water from the southern hemisphere up to the north, in turn drawing colder water down in the other direction. It is a major stabiliser of the global climate, and is responsible for maintaining the relatively temperate climates found in countries such as the UK.[3]

The AMOC has risen to prominence due to worrying evidence that the likelihood of its collapse has been underestimated by mainstream climate models (Hansen et al., 2025; Van Westen et al., 2024). Scientists have warned that such a collapse would be "catastrophic and impacting the entire world for centuries to come" (Aðalgeirsdóttir et. al, 2024). The potential impacts which could cascade out from such an event could include threatening the very viability of farming in northwestern Europe (Benton, 2020) and a full-scale financial crisis (Helm, 2023). Under such conditions, risks to the foundations of social order cannot be excluded.

[2] Albeit still unfolding over years, decades or centuries depending on the tipping point in question.
[3] The more well-known gulf stream is part of the AMOC.

Worryingly, AMOC is not the only tipping point which may be far closer than most governments are planning for. The 2023 Global Tipping Points Report included that "*Five major tipping points are already at risk of being crossed due to warming right now and three more are threatened in the 2030s as the world exceeds 1.5°C global warming*" (Lenton et al., 2023). The potential triggering of tipping points has also led to a recent analysis warning that the world could see a potential halving of global GDP between 2070 and 2090 if unabated (Trust et al., 2025). At such scales of loss, our economic system would be unrecognisable.

Presently, security institutions worldwide are not up to the task of responding to this new risk landscape. They have been designed in and for a world that no longer exists, where security threats were predominantly posed by outside actors against the backdrop of a stable climate. As a result, no country on earth is adequately prepared for the impacts of climate tipping points (Dimsdale et al., 2022), while discussion of this new class of catastrophic risks remains lacking in mainstream security discourse.

Institutional innovations in how we secure and govern our societies in a chaotic world are vital. But they do not have to start from scratch. Models exist that can provide valuable insights into what a more climate-informed approach to national security might look like. One of the most promising is Finland's 'Comprehensive Security Model' (CSM), along with the associated institutional apparatus around it. While Finland's model carries the same climate blindspots as others, it possesses several characteristics that seem particularly well-suited to being effectively adapted to a new climate reality.

This discussion paper provides a summary of Finland's approach to national security and its potential relevance to climate security. Section 1 provides a brief historical background of Finland's security context, while Section 2 outlines Finland's strategic foresight infrastructure and its comprehensive security model as two unique elements of its national preparedness. Section 3 uses two brief case studies, Russia's invasion of Ukraine and the Covid-19 pandemic, to outline how these security institutions have operated in practice, as well as where they

have fallen short. Finally, Section 4 synthesises conclusions for an evolved approach to climate security.

# 1. Finland's Security and Resilience Innovations

Finland's institutional and policy approach to national security sits against a backdrop of a deep and historically conditioned security culture present in only a few other nations. This culture has been formed through a combination of military hostility from its neighbours and its climate.

Cultural factors likely limit a wholesale transfer of the Finnish model elsewhere, as recent responses to a debate around conscription in the UK should highlight (Smith, 2024). However, this does not mean that the innovations that have arisen in Finland cannot provide valuable guidance, particularly as the severity of climate threats shifts the Overton Window around increasingly transformational responses.

Alongside its dedicated security institutions, Finland has also been recognised as a world leader in anticipatory governance and strategic foresight (OECD, 2022). These institutions have been more widely discussed elsewhere and so are mostly omitted from this paper, however they are summarised in Appendix 1.

## 1.1. The Comprehensive Security Model

*"Comprehensive security is the Finnish cooperation-based preparedness model, in which the vital functions of society are jointly managed by the authorities, business operators, organisations and citizens."*
(The Security Committee of Finland, 2017)

The **Finnish Comprehensive Security Model** (CSM) has been evolving since 2003 but was formalised in its complete form in the 2017 Security Strategy for Society (Ibid.). The CSM identifies that **preparing for a wide range of threats to the essential operations of society is crucial**; preparedness for the likes of power and telecommunications disruptions, natural disasters, pandemics, terrorism, and hybrid influencing are integrated into a single framework. The framework is highly cooperation-based, bringing together a wide range of public and private actors, including citizens themselves, to support resilience. The CSM is thus conceptually and operationally broad, identifying a wide range of risks as matters for national security and encompassing all levels and actors of Finnish society as having a role to play in both preparedness and response.

This balance between flexibility and structural consistency is a defining feature of the Finnish approach. The model places a strong emphasis on continuity management, ensuring that essential operations persist even under stress. To achieve this, flexibility is prioritised, empowering actors to adapt rapidly to evolving incidents while preserving core operational stability.

### 1.1.1. The seven vital functions for society

The core aim of the CSM is to safeguard seven 'vital functions for society' (Ibid.) (Figure 1). These provide the conceptual scaffolding for the model, organising and directing Finnish national security strategy and practice:

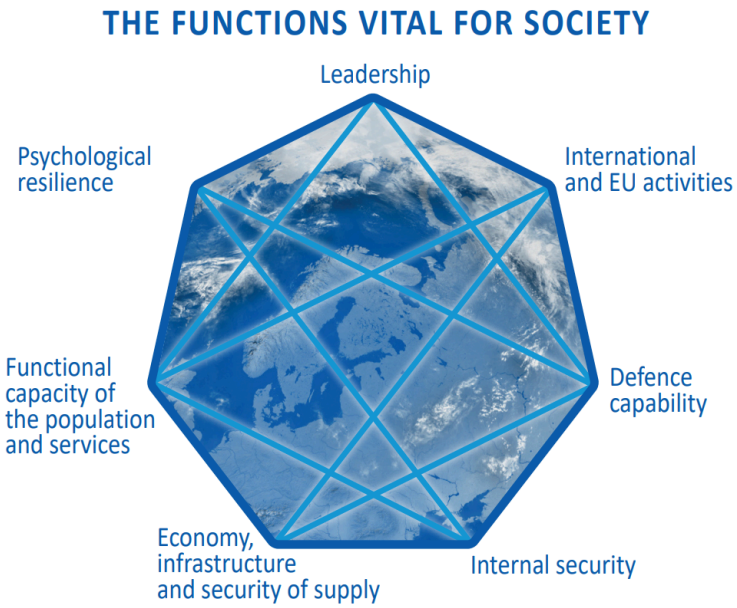
- **Leadership** is essential for safeguarding all other functions. It ensures effective cooperation and a clear division of responsibilities across actors fulfilling essential security operations.
- **International and EU activities** provide a basis for international cooperation around crisis prevention and response, integrating EU and regional coordination in particular into security planning.
- **Defence capability** enables Finland to deter and repel threats against its independence and territorial integrity. It

encompasses military capabilities, societal defensive preparedness and international defence cooperation for both military and hybrid threats.

- **Internal security** maintains public order and safety, protects basic infrastructure, and prevents crimes, including terrorism.
- **Economy, infrastructure, and security of supply** safeguard the funding, economic stability and resources required for other vital functions. These include infrastructure such as transport, digital services and energy, along with other essential resources such as food supplies and labour.
- **Functional capacity of the population and services** maintains key basic services such as social security, health and welfare, and education to maintain day-to-day social stability and citizen protection in all circumstances.
- **Psychological resilience** is the ability of individuals, communities, society and the nation to withstand the pressures arising from crises. This allows all actors to participate in crisis response and recover from their impacts, with a basis created in normal conditions and maintained through various services and communications.

The expansiveness of these seven functions is notable. The CSM identifies security as being multifaceted and states that an effective approach to resilience must support all these elements. It also recognises the interconnections between the vital functions; neglecting one means weakening the others. This creates a more integrated and expansive approach to national security than almost anywhere else in the world.

**Figure 1. The Seven Vital Functions for Society, According to Finland's CSM**




*Source: Security Strategy for Society (The Security Committee of Finland, 2017)*

### 1.1.2. Operational mechanisms

The broad scope of the CSM is matched by an equally broad approach to stakeholder involvement. The model's effectiveness stems from its ability to integrate diverse actors while maintaining clear operational boundaries. Along with core national government departments and public bodies, regional administrations, municipalities, business communities, NGOs and citizen groups all engage in collaborative preparedness planning. This creates a network of crisis-ready stakeholders, with a clear sense of how to work together. A more detailed breakdown of actors and roles is given in Appendix 2.

A central mechanism for the joint preparedness are cooperation forums, held at national, regional, and community levels (Ibid.). These

forums are spaces where actors from across the public, private, civil society and community spheres can come together to build collective preparedness, and develop response procedures for potential crisis scenarios. Particularly at local levels, these forums are designed to overlap with existing institutional infrastructure for cooperation to avoid duplication and maximise open participation. These forums are used to:

- Identify and assess risks related to their activities.
- Plan joint actions for managing risks and ensuring the continuity of vital functions.
- Develop preparedness plans, including lines of authority, continuity management, resource allocation, crisis communication plans, and recovery strategies.
- Train and practice together to ensure the effectiveness of their plans.

**Figure 2. Multi-stakeholder Coordination Under the CSM**

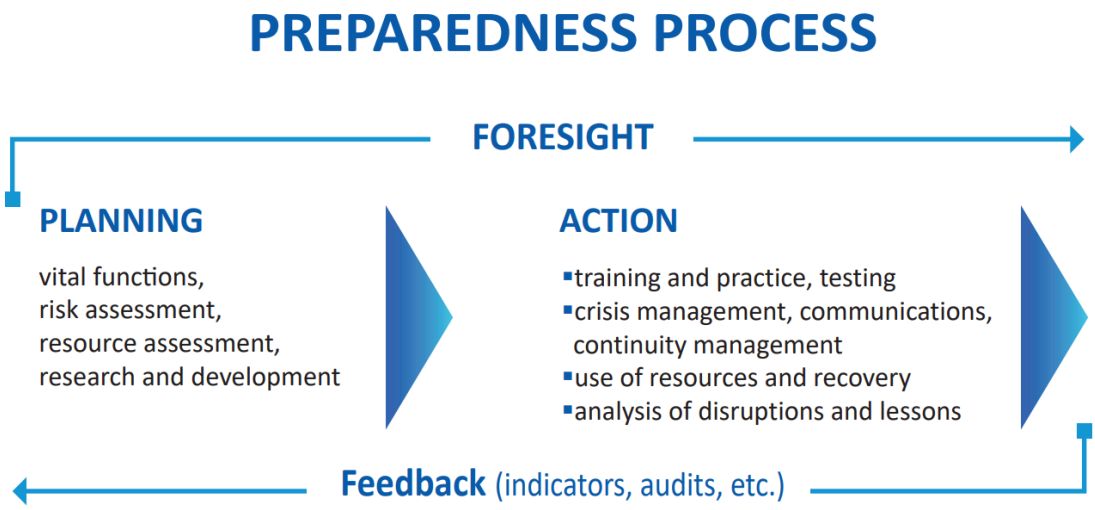

*Source: Security Strategy for Society (The Security Committee of Finland, 2017)*

### The preparedness process

The CSM further places a heavy emphasis on *preparedness*, ensuring that key strategic tasks can continue with minimal interruption during disruption or crisis. Preparedness measures include contingency and continuity planning, advanced preparations for disruptive events, and training exercises. Plans must also detail how recovery after crisis events will be achieved.

The preparedness process operates through a cyclical process of foresight, planning, action, and feedback as illustrated in Figure 3.

**Figure 3. Preparedness Process Under the Comprehensive Security Model**




*Source: Security Strategy for Society (The Security Committee of Finland, 2017)*

### Information generation and sharing

Open and accessible information is considered crucial for the success of the model. The implementation of the CSM as part of the security

strategy is guided by the national risk assessment, updated roughly every three years (Finnish Ministry of the Interior, n.d.). Threat scenarios are assessed and outlined via a process of strategic foresight, drawing on expert input and evidence gathering. While national strategy is underpinned by an overarching national risk assessment, regional administrations are also mandated to produce their own locally specific risk assessments. These enable devolved coordination around risks which may have differential impacts across the country.

Alongside more expansive risk assessments, which are carried out at longer time intervals, information is generated on an ongoing basis via research and analysis, foresight methods and experimentation. These processes are designed to identify weak signals of change in the operating environment that may be relevant to preparedness and ensure that actors have an up-to-date understanding of the most effective tools and approaches available. Relatedly, national research is used to build technical and industrial capacity under normal conditions, which can then maintain resilience and act to support emergency response.

Rapid information dissemination across all relevant stakeholders—within the confines of security clearance—is recognised as essential to preparedness planning and trust building. This includes education and outreach campaigns as well as more targeted briefings.

### Feedback

Feedback is identified as central to assessing and iterating preparedness strategies. Feedback processes are designed to operate both before disruptive events have taken place via audits and expert assessments, as well as after events have taken place in the form of post hoc investigations and reviews. These processes are designed to generate useful intelligence and learning from experts and strategic actors who have worked in crisis situations, to improve the implementation of the CSM on an ongoing basis.

### Leadership and coordination during crises

The CSM aims to ensure that during disruptions and crises, there are minimal changes to standard operating procedures, including divisions of responsibilities and lines of authority.

The foundation of crisis response in the Finnish system rests with the relevant, predetermined competent authorities who retain their standard responsibilities and powers during disruptions. This principle ensures that expertise and established protocols continue to guide operations rather than creating parallel crisis structures that might introduce confusion or inefficiency.

The Government maintains strategic oversight while preserving operational autonomy. Each ministry, under the leadership of its permanent secretary, maintains responsibility for security and preparedness within its domain. However, as discussed in Appendix 3, ministries will often be allocated joint ownership of particular crisis scenarios, ensuring integrated preparedness and response and avoiding the pitfalls of departmental siloing. This distributed approach to crisis management is supported by the central coordination of the Security Committee, which brings together the heads of major ministries and agencies, along with the head of the Finnish Red Cross as NGO liaison, to monitor strategy implementation and evolving security challenges. The model's effectiveness also relies heavily on robust coordination across multiple governance levels. National, regional and municipal administrative bodies will cooperate extensively, with accountability devolved downwards across many domains to foster operational agility.

## 1.2. What makes the Comprehensive Security Model unique?

### 1.2.1. An expanded concept of security

The Finnish approach to security is as much a conceptual innovation as a material one. The concept of comprehensive security does several

things which extend beyond just guiding the strategy of key stakeholders:

1. **It creates space for more things to be dealt with as security matters.** The Finnish concept provides a more holistic understanding of what security *is,* going far beyond the hard security that dominates most countries.
2. **It fosters a more central role for security in society.** It is not earmarked for certain special domains but runs as a current through many activities and decisions.
3. **It expands the scope of who counts as a security actor.** Security applies to almost everyone and everyone with all having roles and obligations under the widened security architecture.
4. **It democratises security as an issue.** Traditionally security issues pull societies towards less democratic ways of operating, but by involving many actors in diverse ways the Finnish approach resists this pull.

This final point can be seen most clearly through the theoretical lens of *securitisation*. In the security studies literature, securitisation refers to the designation of regular political issues as matters of security. This then justifies the use of extraordinary measures to address them (Balzacq et al., 2016). Many worry that securitisation can erode democratic norms by undermining transparency and accountability.

The Finnish model can be seen to securitise far more elements of society than elsewhere in the democratic world. However, rather than security justifying extraordinary measures being taken across a wider range of societal domains, the sheer expansiveness of the Finnish concept does almost the opposite: it *normalises* security by bringing it into the fold of ordinary, everyday decision-making and the purview of a wider number of stakeholders. Security does not mandate exceptions from the norm, it becomes the norm.

Like anywhere else, security in Finland does still act to justify particular extraordinary actions such as joining NATO or the Covid-19 lockdowns. However, the Finnish approach generally creates a counterweight to the traditional currents of securitisation towards more extreme and unilateral courses of action. Instead, security becomes one of the fundamentals of everyday life, deeply incorporated into the institutional fabric of society in a manner that creates a raft of quite mundane measures that are far more compatible with a highly democratic and voluntaristic society.

### 1.2.2. Legitimation through consensus

Finland's approach also focuses strongly on fostering an aligned analysis of the security situation across society. The approach builds the trust and legitimacy of the security apparatus. It also contributes to operative effectiveness, as outlined in section 1biii.

There are several channels that are used to build consensus. One of the most obvious is military conscription, which ensures that large (albeit still predominantly male) swathes of society gain a deeper understanding of essential security considerations through direct and shared experience. Citizens who may otherwise have highly varying socioeconomic, geographic or educational perspectives are nonetheless inculcated with the same understanding of security by way of this equalising programme (Ruokonen, 2023). Military service thus provides not only material but also immaterial benefits, by way of developing shared knowledge and understanding.

Other notable channels are the National Defence Courses and National Special Courses. Hosted by the defence forces, these are elite, invitation-only exercises to bring together central actors from the different domains of comprehensive security and build alignment and shared capacity around security objectives (The Security Committee of Finland, n.d.). Attending these courses is deemed prestigious and desirable, ensuring enthusiastic voluntary participation from even the uppermost echelons of Finnish society. Regional defence courses are offered in a similar vein but with a focus on regional and local rather

than national preparedness. In all these cases, the courses operate to ensure that the stakeholders who will be making essential decisions in the face of crisis, and who will be expected to cooperate closely and effectively with one another under high pressure, will be doing so from a shared analysis.

In addition to these more active alignment mechanisms, consensus is built through a range of communication and engagement activities. One interesting example is The Finnish Terminology Centre (TSK), commissioned by the Security Committee, producing a dedicated publication detailing the key vocabulary for the Comprehensive Security Model (The Finnish Terminology Centre TSK, 2017). This highlights a significant commitment to building understanding and alignment around even the granular details of the concept. This vocabulary document is produced via a consultative process with diverse stakeholders and updated in line with every new Security Strategy for Society, ensuring shared understanding extends to even the granular detail of language use.

Engagement with wider society takes the form of events, presentations and training delivered through institutions such as schools, businesses and local administrations, alongside communications campaigns. The '72 Hours' concept, emphasising that households must possess all the supplies to enable them to survive independently for 72 hours in a crisis, is a prime example that is well-known throughout Finland (The Finnish National Rescue Association, n.d.). This is further bolstered by the 'National Preparedness Day' held annually on 7th February.

These processes build legitimacy and social mandate for security actors by ensuring that important needs, challenges and objectives are widely understood and accepted. Such a level of alignment builds trust both across security actors and society at large; actors can be confident that others are operating based on an analysis they share and endorse, and can thus happily support one another even if they do not possess a full set of information (e.g., because of confidentiality or even simply communicative time lag). This level of alignment enables flexible responses within broad mandates without the drag of constant challenge and requests for justification. Consensus is an essential

underpinning of the voluntary cooperation which is fundamental to the CSM.

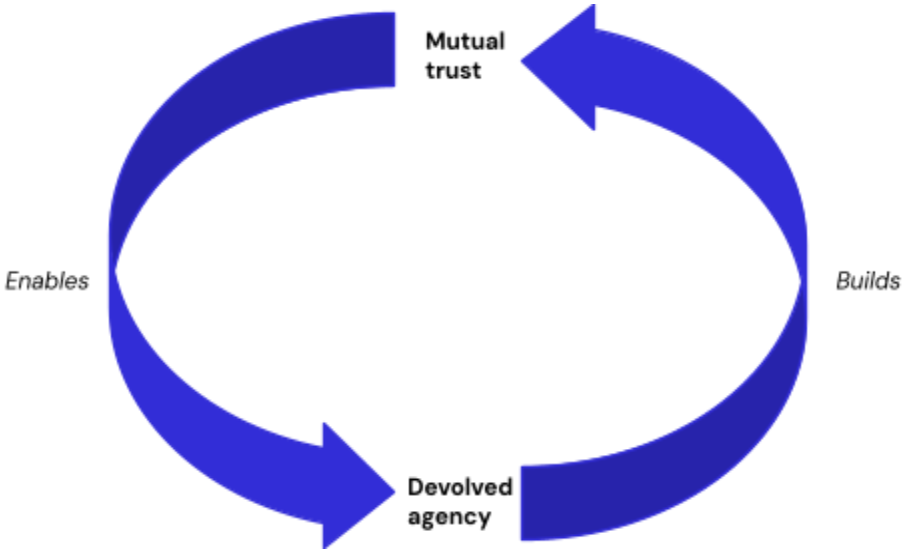
> *"Decentralisation and voluntarism can be trusted to deliver effective outcomes because all actors are confident that their partners have the same normative understanding of their obligations as security actors, and the same positive analysis of the material reality and the responses it requires."*

### 1.2.3. Decentralisation and devolution

**Consensus building also assists operational effectiveness.** Effective cooperation requires all relevant stakeholders to have a clear understanding of their roles and responsibilities within the security apparatus. Ensuring that this understanding is deeply embedded across society means that if crises require rapid response, decision-makers can focus their attention on the vital matters in their domains, confident that others will be acting in an aligned and complementary manner without wasting precious time and resources on close instruction or monitoring. This facilitates a far more decentralised approach which reduces common coordination issues such as principal-agent problems (Coletta, 2013).

The decentralised and devolved approach of the CSM leverages the trust built via consensus to great effect. In devolving responsibility and agency and emphasising cooperation rather than command, it also further reinforces trust and legitimacy by creating a sense of mutual empowerment. This results in a **virtuous cycle** between trust and legitimacy on the one hand and effective, devolved action on the other.

**Figure 4. The Virtuous Cycle Between Trust and Devolution**




This approach is visible in the heavy emphasis on local ownership of preparedness planning. Regional and municipal administrations are both tasked with coordinating the relevant stakeholders at their respective levels of governance, again including public, private and non-governmental organisations, to ensure that the continuity of essential services can be maintained and that a locally tailored response can be quickly deployed in crisis situations. Mechanisms for coordination and cooperation between devolved groupings, and between local and central government, also enable mutual support where it is needed.

Regional preparedness committees and cooperation forums bring together multiple municipalities and other important actors for joint planning and training while the Ministry of the Interior coordinates similar activities between regions. Crucially, devolution does not amount to mere buck passing from national to more local levels of

government; devolved agency is coupled with support and coordination across and between levels.

In this way, Finland's devolved approach ensures that local actors are empowered to act effectively for their populations, but also that the unique characteristics of each can be brought together to maximise their collective resilience.

### 1.2.4. Collaboration around soft mandates

The Finnish model is driven by a highly collaborative way of working, even by the most important security actors. Many of the threat scenarios outlined in the Security Strategy are jointly owned by multiple, cooperating ministries (The Security Committee of Finland, 2017). Meanwhile, key elements of the security strategy itself, including the comprehensive security model and accompanying vocabulary publication, are developed through highly consultative multi-stakeholder processes. Meanwhile, cooperation forums and open public training institutionalise broad participation in all aspects of security preparedness.

This approach is most notable when examining key security bodies such as the National Emergency Supply Agency (NESA). This body, operating under the Ministry of Economic Affairs and Employment, is tasked with ensuring supply of critical goods and services can be maintained through crises (National Emergency Supply Agency, n.d.). The body operates in a number of interesting ways:

- It has a broad, unspecific and "soft" mandate, with limited coercive power it can wield over others.[4] Rather than act as a central source of power to compel others into compliance, NESA works through partnerships, guidance and negotiated, voluntary collaboration with a range of public and private actors.
- This mandate creates space for a more flexible and adaptive way of working; unconstrained by a rigidly demarcated remit

[4] See Appendix 2.

NESA can shift how and with whom it engages based on its judgement of the security context of the moment.

- This even extends to holding shares in a selection of companies critical for national functioning (National Emergency Supply Agency, n.d.).

By working in this way, NESA can also be more confident that stakeholders choosing voluntarily to cooperate and follow its guidance can be reliable partners and not attempt to "game the system" of compliance with a harder mandate. In situations of crisis and disruption, this confidence is invaluable.

The conceptual alignment outlined in 1.2.2. is essential to both decentralisation and voluntary cooperation; decentralisation and voluntarism can be trusted to deliver effective outcomes because all actors are confident that their partners have the same *normative* understanding of their obligations as security actors, and the same *positive* analysis of the material reality and the responses it requires.

# 2. The Finnish Approach in Action: Responses to the Ukraine Invasion and Covid-19 Crisis

Russia's invasion of Ukraine and the Covid-19 pandemic both in different ways provided testing grounds for Finland's security strategy to be put into practice, highlighting both the strengths and blindspots it possessed.

Russia's invasion of Ukraine particularly highlighted the results of Finland's effective consensus building around security through its swift entry into NATO.

From the mid-1990s until the invasion, Finland maintained a 'NATO option' comparable to the US' long-running strategy of 'strategic ambiguity' around Taiwan; Finland remained militarily neutral but left the door open to NATO membership should its security situation change (Forsberg, 2023).

The invasion was just such a change. Finland mobilised in a seemingly spontaneous yet coordinated fashion to exercise the NATO option, based on widespread consensus around the threat posed by Russia's aggression. There was no single public moment when the debate over joining NATO happened. Instead, there was a tacit and widespread acknowledgement that this response was necessary, with national discussion moving quickly on how to move towards this end; even the traditionally anti-NATO Left Party participated constructively in the discussion on how rapid NATO accession should be pursued. The process has been highlighted as an example of 'bottom-up foreign policy' being carried by a groundswell of public opinion (Forsberg, 2024).

The rapidity and unanimity of this move, operating in a highly coordinated fashion without the need for extensive public debate about what to do, was impressive. Consensus enabled cooperative cross-party problem-solving around how to achieve a shared goal. This capacity shows the dividends of Finland's analytical alignment building around security, enabling efficient crisis response which avoids the quagmire of political deadlock.

The Covid-19 pandemic on the other hand, has become the paradigmatic case of response to civil emergency. While Finland performed relatively well overall (Varanka et al., 2022), it also exposed areas for learning and improvement. Despite Finland's extensive foresight capabilities (see Appendix 1) it, like everywhere else on earth, failed to anticipate or adequately prepare for the type of pandemic scenario that emerged. The National Emergency Supply Agency (NESA) faced controversy when some of the medical supplies in its stockpiles were found to be outdated and unusable (Pieti, 2020), and for executing rushed emergency purchases of protective equipment that

failed to deliver the necessary quantity or quality of goods (Rautio, 2021).[5]

These issues were all commonplace across Europe and the world at large, however it is notable that Finland faced similar issues to many peers despite a dedicated institutional apparatus to mitigate such risks.

> *"While Finland's institutional framework provided important advantages during the pandemic response, the experience reveals critical areas for improvement in translating institutional capacity into operational capability. These lessons have particular relevance for preparing security institutions to handle a future of complex climate threats."*

The governance response also displayed a **tension** between the centralising tendency of national-level crisis response and the decentralisation crucial to Finland's approach. While major high-level policy decisions were tightly managed at the national level, there were ambiguities around the roles and responsibilities of regional actors in certain domains, muddying the chain of command in an unhelpful manner (Karreinen et al., 2023). Finland's extensive joint planning and devolution structures were insufficient to entirely remove the coordination problems arising from a crisis.

The key lesson emerging from Finland's pandemic experience is that **robust institutional capacity does not automatically translate into effective capability**. Finland did perform well, and its strong institutions were central to this. However several factors appeared to

[5] A subsequent enquiry noted intense pressure on NESA from the Ministry of Social Affairs and Health, and the Ministry of Employment and the Economy to act, despite the ministries being aware of the risks of such rushed procurement.

constrain the conversion of institutional resources into optimal outcomes:

1. Foresight and preparedness processes did not account adequately enough for the full spectrum of scientifically plausible risks, meaning a novel coronavirus was not planned for as it should have been.
2. Even Finland's prestigious institutions remained vulnerable to the inherent short-term pressures of democratic politics, as illustrated by pre-pandemic budget cuts that reduced strategic stockpiles. This dynamic poses particular concerns for managing challenges like climate security.
3. Finally, the pressures of crisis response can add strain even well prepared and thought through systems of cooperation, highlighting unclarity around strategically important details which was not apparent in a pre-crisis situation.

While Finland's institutional framework provided important advantages during the pandemic response, the experience reveals critical areas for improvement in translating institutional capacity into operational capability. These lessons have particular relevance for preparing security institutions to handle a future of complex climate threats.

# 3. Lessons for Climate Security

## Climate security requires conceptual as well as institutional innovation

Finland's Comprehensive Security Model sits atop a widely accepted concept of security. This concept is both broad in terms of the domains it encompasses, and deep in terms of the aspects of society it affects; Finland's highly developed institutional responses to security and resilience are made possible by successfully recasting what security *means*.

The importance of such conceptual innovation to climate security stems from the all-encompassing nature of climate breakdown. Worsening climate and ecological crises will cascade through multiple other social systems (Townend et al., 2023). Worst-case scenarios such as tipping points will cause chaos dwarfing all but the most existential of traditional security risks. Our vulnerabilities are not grounded in particular sectors and do not stem from particular hostile agents. Instead, they stem from our existence in a world transformed to be far more volatile and dangerous than we have ever known.

In such a world, severe and cascading shocks–from physical events such as wildfires, droughts and floods through to associated impacts like food insecurity, supply chain breakdown, macroeconomic instability, survival migration and even political instability–will become increasingly normalised. We also operate in a peculiar zone of uncertainty whereby we have become aware of the potential occurrence of disastrous tipping points coupled with a high degree of uncertainty over when they might occur (Armstrong McKay et al., 2022).

In response to this, climate discourse has seen a move beyond focusing solely on mitigation to emphasising adaptation and resilience; the term 'transformative adaptation' is gaining traction in identifying that our response to worsening climate change requires a fundamental restructuring of our societies (Fedele et al., 2019). An expanded notion of security which fits this state of affairs must form a central part of the adaptive process. Whether we like it or not, climate security will be increasingly significant in shaping the day-to-day functioning of our societies; insecurity is increasingly becoming the new normal even in wealthy countries, and this is only set to continue. The choice is whether we allow ourselves to be shaped *reactively*, only by impacts once they occur, or whether we *proactively* take steps in advance to prepare accordingly.

Conceptual innovation is also required to guard against the more insidious elements of securitisation. As conditions worsen, there is a risk that climate security indeed becomes foregrounded, but in a manner which undermines the essential tenets of liberal democracy. An

expanded notion of security which can create a broader tent for democratic involvement across society which reduces the potential undemocratic pull of securitisation.

The Finnish concept of security, with its emphasis on wholesale and widespread preparedness integrated through all levels of society, illustrates what an effective normalisation of security and resilience can look like in a democratic society. It thus provides a useful framework that can be expanded to climate risk adaptation.

## Climate security must prioritise legitimation and shared analysis

Finland's model works because of its emphasis on consensus and shared understanding, creating a high level of trust and legitimacy. These are areas where climate action as a domain suffers far more than most. Even many senior decision-makers are dangerously uninformed about the full implications of severe climate risks such as tipping points. And this lack of awareness is even more stark when we observe evidence of wider public perceptions. Two recent studies identified only 25% of British survey participants (Bellamy, 2023) and 18% of Norwegian respondents (Nadeau et al., 2024) were familiar with climate tipping points. The lack of even a shared baseline understanding of the true scale of climate risk significantly hinders the capacity for resilience building.

Meanwhile, political polarisation around climate has created a legitimacy crisis. This is most keenly seen concerning mitigation activities but as adaptation and risk preparedness take a more substantial role in the policy discourse, there is a danger that these also become subject to the same pushback. Preparedness will impose obligations and changes on a wide range of actors, and every effort must therefore be made to secure buy-in and avoid backlash.

The framing of climate action as prudent national security planning presents an opportunity to transcend some of the polarisation which has hindered progress so far; security is identified as a top priority of

European electorates (Eurobarometer, 2024) while in the UK concerns over issues such as cost of living and health (YouGov, 2024) create further potential hooks for cascading climate risk to resonate. Supporting decision-makers and the public to see that climate change poses a severe and immediate threat to basic functioning, stability and safety may help generate support for action.

Finland's emphasis on society-wide engagement and education indicates how such outcomes might be achieved. Effective government communications around pillars such as the 72 Hours concept for household preparedness, alongside a range of forums for learning and participation, have drummed the fundamentals of security and resilience into all corners of Finnish society. It has also legitimated security as a priority in key decisions and built trust in those making them based on an increased depth of understanding. A similar approach around climate security could emphasise adaptation as part of preparedness, and create channels for joint adaptive action at community, regional and national levels. Engagement could similarly emphasise key features of the risk landscape to frame and justify the role of climate in policy and decision-making.

## Flexible cooperation is essential in a chaotic and uncertain world

Cascading climate shocks will impact different places differently. Some may be innately localised, such as local infrastructure damage or flooding. Even more universal crises, such as a breakdown of key food supply chains or a national economic crash, will be mediated by pre-existing socio-economic differences across regions and households.

This variability in impact and vulnerability means local actors will often be best placed to lead certain elements of preparation and response, leveraging their more nuanced understanding of local stakeholders, assets and weaknesses. The principle of subsidiarity in crisis preparedness and response, where decisions are made at the lowest (competent) level possible, ensures that preparedness strategies

leverage the full extent of place-based knowledge. It also facilitates buy-in and participation in preparedness and response, as local leaders are better placed to directly engage peers on an equal footing than the national government.

A more cooperative, flexible and voluntaristic approach is also more appropriate given the high uncertainty around climate risk and the significant range of crisis scenarios which may occur. For countries such as the UK and Finland, the spectre of climate tipping points means preparedness must account for not only the consequences of a hotter climate but, under scenarios such as SPG or AMOC collapse, a dramatically cooler one also, with far more extreme swings in temperature (Laybourn et al., 2024). This is not to mention the litany of potential shocks–from migration and financial crises to supply chain breakdowns and disease outbreaks–which will spread far beyond the silos of any one government department. In such an uncertain world the ability of security actors to collaborate adaptively in response to changing reality, rather than being bound by rigid roles and responsibilities, will again be essential.

The Comprehensive Security Model again provides a blueprint for how localised preparedness and devolved agency can be combined with fluid cooperation to enable a far more agile response to climate risk. Baking these principles into the structures of institutions, formal relationships, mandates and strategies and then calcifying them through repeated joint preparedness activities will be essential to enabling a flexible and whole-of-society response to conditions of high uncertainty.

## Without addressing politics, even the best institutions cannot guarantee preparedness

Finland offers many lessons for developing a more capable approach to climate security. However it is not perfect, and the shortfalls in the Finnish model provide equally valuable insights. Despite having world-leading foresight (see Appendix 1) and security apparatus, Finland shares the same blindspots as other nations around climate

risk, particularly regarding tipping points. This was recently highlighted by an open letter by 42 climate scientists to the Nordic Council of Ministers warning that the risk of a collapse in the Atlantic Meridional Overturning Circulation (AMOC) had been underestimated by Nordic governments, to potentially devastating effect (Aðalgeirsdóttir et. al, 2024).

The Covid-19 pandemic provides another telling example. Finland found itself underprepared because the threat fell so far outside the bounds of expectation which framed its strategic foresight activities. Against this backdrop, preparedness budgets were cut to fulfil shorter-term political priorities. Institutional *capacity* alone was not enough to guarantee preparedness *capability*. Key elements of the response itself, such as ambiguities in the chain of command which only became apparent during the crisis, demonstrate that even the best thought through strategies and structures can struggle under novel conditions of emergency.

Three learnings emerge for climate security:

1. Governments need mechanisms to better incorporate expert knowledge. This should first extend to preparedness; experts across the world raised the alarm around pandemic risk and flagged widespread vulnerabilities to no avail (Avishai, 2020) just as many are now doing around climate. Ensuring there are effective channels for such analysis to reach leaders is essential. But these channels must also be incorporated into response, to ensure that even under the pressure of emergency such knowledge is still leveraged . Recognition across the world that behavioural and social scientists were underutilised during the Covid-19 pandemic should be a warning (Sunstein et al., 2022), given these fields will be just as vital in the face of cascading climate risks.
2. Governments must find ways of overcoming the myopic pressures innate to the democratic electoral cycle. Leaders must be willing and able to invest in preparedness and resilience as a priority, even when faced with budget constraints and competing demands. Engagement and education are a necessary piece of the puzzle around electoral buy-in. However,

priority should also be placed on identifying "no-regret" options, where resilience-building activities will produce present-day co-benefits which improve their attractiveness. Exploring the opportunities to generate resilience through adaptations which also relieve other pressures, for example decentralised renewable infrastructure which also lowers energy bills, appears promising.

3. Stress testing is essential. Even what appear to be well practiced plans and coordination strategies can have blindspots which are only exposed once crisis hits. While whole-of-society wargaming of extreme shocks is likely infeasible, governments should do everything they can to stress test their strategies in novel ways which can put pressure on agreed structures and identify potential points of weakness or ambiguity.

# Conclusion

Cascading climate risks render the national security institutions of today unfit for purpose. Shocks, which will only increase in their frequency and severity, are part of the new normal today, not the distant future. And the looming spectre of tipping points poses one of the most extreme threats to security we face today. Despite this, climate risk plays only a nominal role in the security strategies of most countries across Europe, while extreme scenarios such as tipping points are all but absent. Building the resilience and preparedness to face this new reality requires significant institutional innovation.

Finland's Comprehensive Security Approach provides a useful starting point for such innovation. Taking a whole-of-society view of the pillars of national security, and the stakeholders who have a role to play in it, it is well placed to expand to environmental risks which will ripple across social systems and departmental silos. Meanwhile, a decentralised approach to coordination and a highly cooperative way of working, enabled by investing heavily in awareness and alignment building

around security issues, creates the agility to respond to the diverse threats posed by a world of climate breakdown. These principles will manifest and function differently across other political and cultural contexts, and work remains to expand them to explicitly address the new climate reality and guard them against the more human pitfalls of politics. However given how fatally vulnerable we currently are, it is paramount this work starts now. If it does not, and we fail to learn the lessons from our lack of pandemic preparedness, then the future will hold far worse.

# Appendix

## A1. Finland's Strategic Foresight Institutions

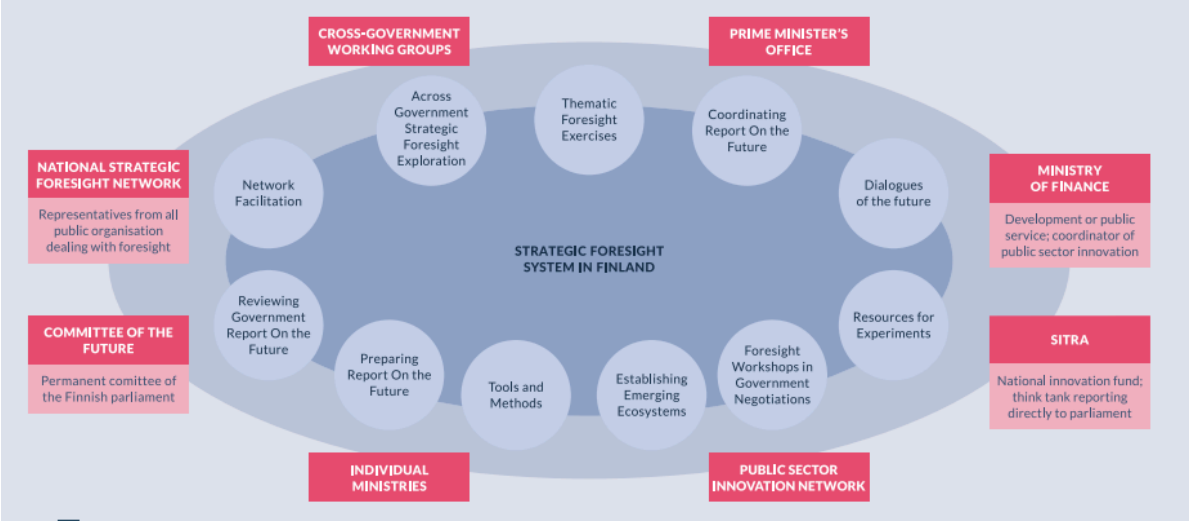
Strategic foresight refers to a systematic approach to engaging with possible futures to prepare for change (OECD, 2022). Finland's strategic foresight infrastructure has long been recognised as world-leading (Ibid.). Governance of this kind is particularly useful in navigating uncertain future possibilities and has direct relevance to incorporating anticipation of climate risks into government.

Finland's national strategic foresight infrastructure has evolved into a decentralised, well-connected multi-leveled system with a complex structure that involves various actors. At the heart of this framework, the National Foresight Network, the Committee for the Future, and the Futures Research Center play a crucial role, reflecting the institutionalised nature of Finnish foresight. This system operates on a cascading structure where the prime ministry collects data from ministries, which, in turn, gather information from regional centres, and regional centres collaborate with cities. It is further marked by its comprehensive and interconnected nature, encompassing various forms of foresight activities, including:

1. National ministry level foresight systems
2. A parliamentary policy level foresight system (Futures Committee)
3. Industrial and economic forecasting and foresight systems (especially ETLA and the EK Education Intelligence system)
4. The larger technology foresight systems of SITRA, Tekes and VTT
5. The regional foresight activities of the TE centres and regional municipalities
6. Foresight activities and processes of companies and corporations

Furthermore, the system fosters collaborative efforts across different levels of governance and sectors, allowing for effective coordination among foresight actors, enabling comprehensive analysis, planning, and initiatives.

**Figure 5. Finland's Strategic Foresight System**




*Source: Towards an anticipatory innovation governance model in Finland (OECD, 2022)*

Key aspects making up the Finnish anticipatory framework can be summarised as follows:

1. Decentralised, but collaborative
2. Multileveled rather than regional
3. Preemptive rather than reactive

With a set of guiding bodies allowing for their application:

**1. Government Foresight Group**

An expert group that supports the Government's work on the future and the activities of the National Foresight Network. The objective of the group is to develop and strengthen the links between foresight activities and decision-making processes, serving as an advisory body in the preparation of the Government Report on the Future, a report submitted each electoral term identifying trends and issues which should shape decision-making, and the ministries' futures reviews. It further supports the development of a foresight work at the national level. Its members are experts in foresight and futures work and represent both producers and users of foresight data.

**2. National Foresight Network**

Brings together Finnish foresight knowledge producers. The network is coordinated by the Prime Minister's Office and the Finnish Innovation Fund Sitra. It functions as a discussion and coordination forum for foresight operators and organises various events.

**3. Joint Foresight Working Group**

Coordinates the Government's joint foresight work and acts as a disseminator of foresight information. It also serves as a forum for communication on foresight within the Government and provides a cooperation network for ministries while preparing the Government Report on the Future.

These are not directly security and resilience-focused, with this more specific task being covered by the national risk assessment. However, they act to do two things:

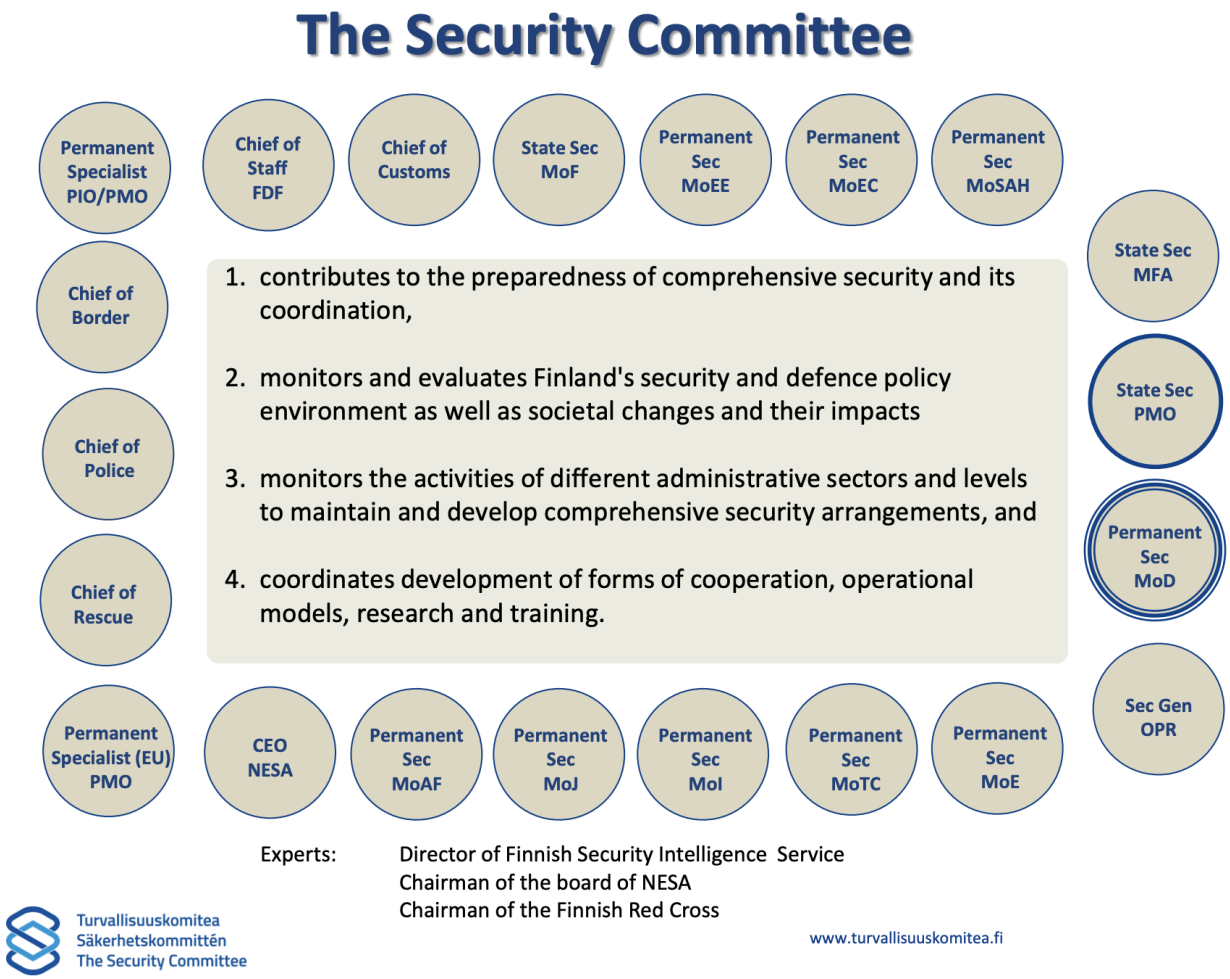
1. Create a culture around the role and importance of foresight across a wide range of departments and actors; foresight is not a niche or isolated activity but is present in many domains across and beyond government. This means that key stakeholders with roles and responsibilities under the CSM are accustomed to thinking strategically about the future in a manner which enhances their capacities as security actors.
2. Build dispersed institutional capacity around foresight, establishing the processes, tools, methods and expert relationships which can be mobilised in more specific security and resilience processes.

## A2. Detailed breakdown of actors and roles under the Comprehensive Security Model

*Note that while this list identifies most major security stakeholders, it should not be taken as exhaustive.*

Public authorities, supported by expert guidance from universities and research institutions are tasked with developing, drafting and overseeing the implementation of legislation and other measures which provide the guiding framework for preparedness. For example, the Security Committee assists the Government in coordinating preparedness and monitoring the implementation of the Security Strategy for Society, while the Government Situation Centre: Compiles and analyses security information to support the Government in decision-making.

**Figure 6.** **The Security Committee of Finland**




*Source: The Finnish Concept of Comprehensive Security (Valtonen, 2017)*

Individual Ministries have specific strategic tasks assigned to it for safeguarding various vital functions, providing a clear chain of command. For example the Prime Minister's Office is

responsible for assisting the Prime Minister in managing the Government and coordinating work with Parliament and the EU, while the Ministry of Defence is responsible for preventing and repelling military threats.

Crucially, however, it is recognised that many strategic tasks operate across domains, and require multiple ministries to hold joint responsibility. For example, the Ministry of Agriculture and Forestry, Ministry of Economic Affairs and Employment, Ministry of Transport and Communications, Ministry of Social Affairs and Health, Ministry for Foreign Affairs are all jointly responsible for the task of safeguarding the food supply. While in many instances a single ministry may take on an overall coordination function within such a group, this is emphasised as a role to facilitate the cooperative response of the group of ministries in charge. This approach thus differs from models such as the UK's Lead Government Department (LGD) model, which takes a far more hierarchical and centralised approach.

Regional administrations, municipalities, and emergency response centres manage preparedness planning in cooperation with other authorities and actors, ensuring the provision of vital services at the local level. Law enforcement agencies (police, Finnish Border Guard, Finnish Customs) are tasked with the maintenance of public order, civil security, and border control.

A wide range of specialist, non-governmental public bodies also collaborate with other authorities to provide expert guidance and fulfil specialised responsibilities. Many of these are typical and found in many countries across the world. But three bodies are particularly interesting: the National Emergency Supply Agency (NESA), the National Cyber Security Centre (NCSA-FI) and the Finnish National Rescue Association (SPEK).

NESA is tasked with maintaining and developing Finland's security of supply. Its key strategic tasks, as listed on its website, are to *coordinate preparedness cooperation between the private and public sectors, oversee the practical arrangements related to the maintaining of national emergency stockpiles and security and compulsory stockpiles, ensure the functionality of essential technical systems and safeguard critical goods and service production* and *monitor international developments and maintain contact with foreign authorities and institutions* (National Emergency Supply Agency, n.d.).

NCSA-FI is one of the organisations tasked with protecting Finland's international information security, specialising in ensuring electronic communications of classified information are secure. Its responsibilities, according to its website, are: *Assessment and accreditation of information systems, assessment and approval of cryptographic products, manage the distribution network of crypto[graphic] material and provide guidance on the secure*

*handling of the material, coordination of national TEMPEST[6] activities and providing guidance around them* (National Cyber Security Centre of Finland, n.d.). Again what is notable is the emphasis on cooperative and advisory ways of working across the wider system.

Finally SPEK, according to its website, is: *an expert organisation for preparedness, accident prevention, and rescue. We do research and safety communications, provide training opportunities, and participate in social debate and societal discussion.* This involves training and communications for households, communities and workplaces and crucially liaising with over 100 networks of civil organisations and volunteers active in the emergency services sector to facilitate cooperation around societal security (The Finnish National Rescue Association, n.d.).

Businesses are recognised as increasingly important to the preparedness process as providers of essential goods and services which help ensure the functioning of the economy and infrastructure. Particularly those businesses involved in the provision of critical national infrastructure, for example energy, must ensure they can maintain operational capability in times of crisis. However a wide range of businesses participate in contingency and preparedness planning, in collaboration with authorities, to foster and maintain an ability to contribute to crisis response.

Civil and community organisations including NGOs and religious groups also play a vital role in providing services, coordinating volunteers, and maintaining special expertise in areas like contingency operations. They support authorities by recruiting and training volunteers, channelling, directing, and coordinating help offered by non-members and making wider contributions to social stability and cohesion.

Finally, ordinary citizens have an explicit responsibility for individual and household preparedness for disruptions to daily life, supported by the guidance of public and civil organisations. For example, the '72 Hours' concept emphasises that every household should be able to survive 3 days without electricity, heat, water and food. Households must ensure they possess adequate supplies to reach this 72-hour threshold. The psychological resilience of the citizenry is also heavily emphasised, which in turn requires strong trust in authorities to be maintained.

As can be seen, the CSM actively seeks to involve all corners of Finnish society in crisis preparedness and response, clearly demarcating responsibilities to every actor while

[6] TEMPEST is a US/NATO designation for Telecommunications Electronics Materials Protected from Emanating Spurious Transmissions, and refers to security countermeasures against eavesdropping on electromagnetic signals via surveillance or eavesdropping

facilitating their support, engagement and cooperation. This diverse and cooperative approach is a unique pillar of the model.

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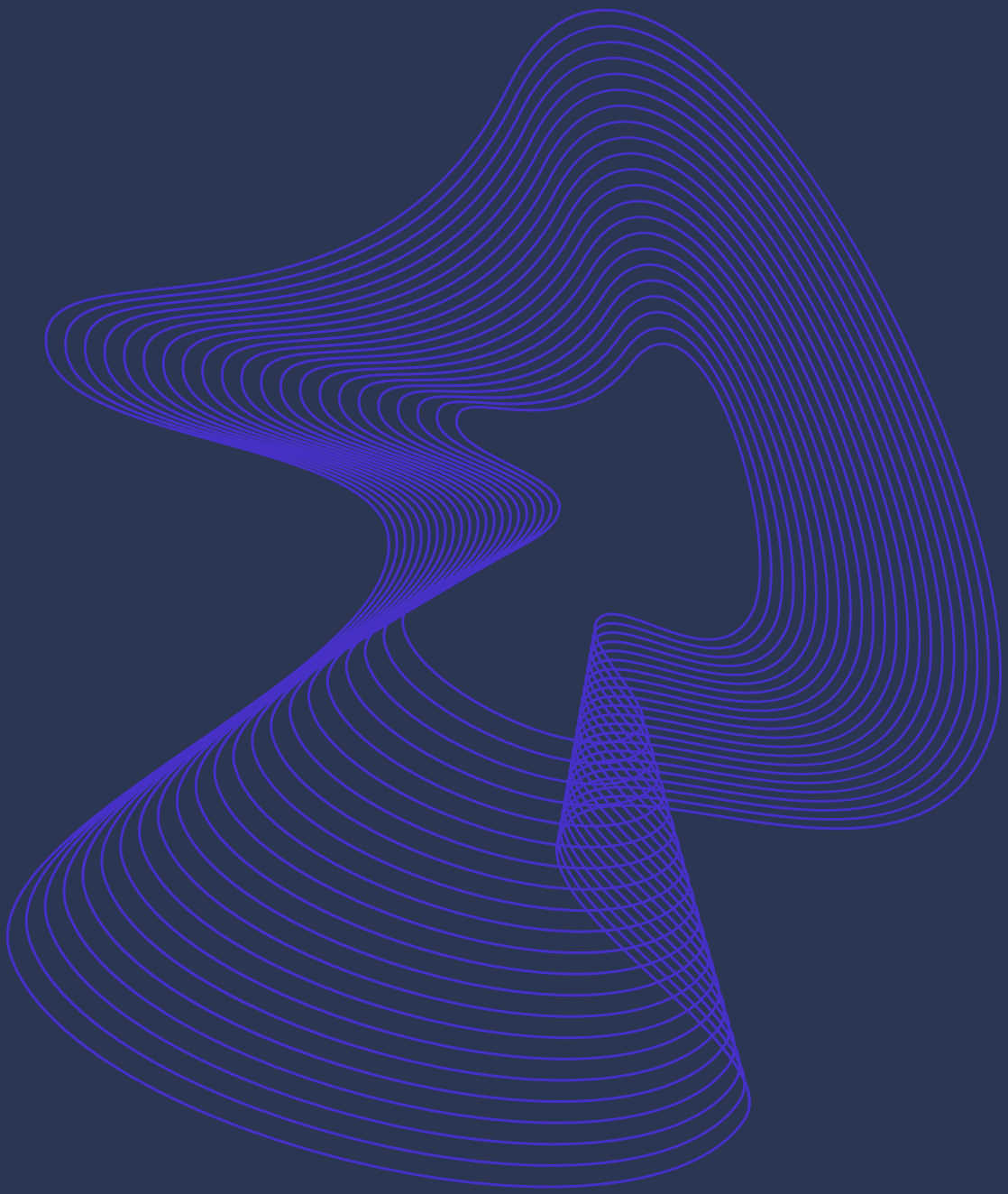

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