NORDIC RESILIENCE

STRENGTHENING COOPERATION ON SECURITY OF SUPPLY AND CRISIS PREPAREDNESS

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FIIA REPORT

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LIST OF ABBREVIATIONS AND ACRONYMS

ARF	Arctic Response Force
CDEM	Civil Defence Emergency Management
CER	Directive on the Resilience of Critical Entities
CIIP	EU initiative on Critical Information Infrastructure
CSDP	EU Common Security and Defence Policy
CSR	Corporate Social Responsibility
DEMA	Danish Emergency Management Agency
DSB	Norwegian Directorate for Civil Protection
ECI	European Critical Infrastructure Directive
EEA	European Economic Area
EEC	European Economic Community
EOP	Enhanced Opportunities Partner
EPCIP	European Programme for Critical Infrastructure Protection
EPPR	Arctic Council working group on Emergency Prevention, Preparedness and Response
ERCC	Emergency Response Coordination Centre
ERNCIP	European Reference Network for Critical Infrastructure Protection
EU	European Union
EUCPM	EU Civil Protection Mechanism
FEMA	Federal Emergency Management Agency
FIIA	Finnish Institute of International Affairs
ICE-SAR	Icelandic Association for Search and Rescue
IEA	International Energy Agency
MSB	Swedish Civil Contingencies Agency
MSI	Modalities for Strengthened Interaction
N5	Nordic foreign and security policy cooperation
NATO	North Atlantic Treaty Organization
NC	Nordic Council
NCM	Nordic Council of Ministers
NCIP	National Commissioner of the Icelandic Police
NCRS	NATO's Crisis Response System
NESA	National Emergency Supply Agency
NESO	National Emergency Supply Organisation
NORA	Nordic Atlantic Cooperation

NORDEFCO	Nordic Defence Cooperation
NRF	Nordic Resilience Fund
OCT	EU Overseas Country and Territory
SFOS	Danish Critical Supply Agency
SPEK	Finnish National Rescue Association

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INTRODUCTION

Perceptions of crisis preparedness and security of supply have undergone a major change in the Nordic region. The Covid-19 pandemic demonstrated the fragility of many of the critical flows on which the Nordics depend for their security of supply. At the same time, the crisis heightened concerns over Nordic cooperation. The different strategies and travel restrictions adopted by the Nordic countries in response to the pandemic created disturbances in people's work and private lives especially in cross-border regions.[1] Now, the war in Ukraine is causing further disruptions to critical supply chains, including energy, food, medical and raw material imports.

These crises come on top of previous developments that have upended threat scenarios in the Nordic region. On the one hand, these threats are of a systemic nature, including disruptions in global supply chains caused by ecological crises or significant cyberattacks. On the other hand, the threats are strategic, relating to the way digital and economic dependencies may be weaponised or used for strategic leverage by the less vulnerable parties in asymmetric relationships.[2] The accelerating use of economic sanctions will reverberate throughout the networked global economy. Increasingly, the Nordics and other European countries also implement tools such as mechanisms for screening investments or other economic activities to protect against nefarious economic activities related to critical infrastructure or sensitive technologies, for example.

The deepening climate crisis will also increase these systemic and strategic risks in the coming years. Both the consequences of the

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1   Creutz et al. 2021.

2   Farrell & Newman 2019; Wigell 2019.

environmental transformation itself and the vast structural changes needed to mitigate it will change and imperil global flows and security of supply around the world, including the Nordic countries.[3]

What these developments highlight is the need for more Nordic co-operation, in particular in security of supply. The Nordic countries are all dependent on international flows of critical goods, products and services. Alone, none of them can be self-sufficient in many critical sectors, but together they have many complementarities. By using the asymmetries in their international and internal dependencies to their benefit, the Nordic countries can collectively strengthen their crisis preparedness and security of supply.[4] As a deeply interconnected region, the Nordic countries also share many of the threats facing them, so that a crisis in one Nordic country will also have deep repercussions on the others. For instance, a successful cyberattack against energy production facilities or transmission grids in any of the Nordic countries could disrupt supply in the other countries due to the shared energy market and cross-border interdependencies.

Without a joint Nordic approach, the disruptive consequences of future crises and supply disturbances risk cascading throughout the whole region. In interconnected and interdependent systems, the source of resilience lies in cooperation. The added layer of cooperation suggested in this report would not come at the cost of the existing cooperation forums; rather, it would supplement them by providing a platform for advancing shared interests not addressed elsewhere or specific issues that require coordination across existing forums. Hence, the purpose is not to create a new competing platform of cooperation, but rather to maximise the impact of existing cooperation and address potential critical gaps.

This report shows how the Nordic countries are well placed to enhance cooperation. Despite wide differences in organisation, the Nordics have many commonalities in how they approach preparedness and security of supply. These commonalities form a solid basis on which to enhance Nordic cooperation. Based on extensive comparative analysis of the Nordics, this report highlights four central traits widely shared by all the Nordics. Taken together, these features form what this report calls the **Nordic resilience approach**.

First, all the Nordics largely build their existing preparedness systems on a **whole-of-society** approach, in which responsibilities for security have been diversified and devolved to market- and society-based actors. In all the Nordics, the adoption of security concepts and practices

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3   Hakala et al. 2019a.

4   Aula et al. 2020.

that highlight broad or comprehensive security underpins the view that modern preparedness – comprising both military and civilian pillars – requires various societal actors, ranging from government to business and civil society organisations, to build resilience capacities, support the state in maintaining preparedness and ensure the continuity of vital societal functions.[5] This approach relies on increasing public–private partnerships, since private actors often own full or partial stakes in critical infrastructure or functions, such as energy, data cables, railways, banking and finance, health services and food supply. The Nordic whole-of-society approach is thus an inclusive model of cooperation that aims to bring all relevant actors together in a comprehensive system of joint preparedness.

Second, the Nordics by and large follow a **whole-of-government** approach in terms of organising responsibilities in preparedness issues between the various authorities. Whilst under normal conditions these responsibilities are sectorally organised, authorities are expected to co-operate and coordinate resources across administrative silos in crises, disruptions and other exceptional circumstances. For example, the police, defence forces, rescue services and border guards usually share capa-bilities with each other to support the lead agency or authority in crisis situations. This cooperation and coordination of resources also extends across levels of government, from central government to regions and municipalities. All the Nordics therefore adhere to an approach that at-tempts to utilise all government and public sector capabilities jointly when necessary.

Thirdly, all the Nordics promote an **all-hazards** approach to prepared-ness, which targets the full spectrum of threats in preparedness planning, regardless of their source, causality or likelihood. In other words, all the Nordics use a preparedness approach that aims at building capacities and capabilities to manage crises, disasters and disruptions, whether they are the result of man-made, natural, technological or societal hazards. The capabilities to respond to multiple simultaneous disruptive events and their connected and cascading impacts are seen to require a holistic approach to preparedness. This holistic approach mitigates against differ-ences amongst the Nordics in their national risk assessments and allows for focusing cooperation on those that are shared.

Finally, while it remains the case that the Nordics use different termi-nology when referring to individual aspects of preparedness, they share a basic understanding of what preparedness should achieve and how it can be developed in Nordic societies. This shared understanding is based on **societal resilience** thinking. Therefore, despite the varied use of terms and

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5   Larsson & Rhinard 2021.

concepts, societal resilience thinking forms a shared basis for a uniquely Nordic approach to dealing with risks and threats.

Consequently, there are not only commonalities in Nordic approaches to preparedness but also a clear need to create a shared framework that builds upon Nordic values and reflects the shared aspirations of Nordic societies and citizens. Such a framework can leverage the existing strong foundations of the Nordic preparedness frameworks and the pragmatic Nordic way of doing things. The divergent typologies and organisational models are not a bottleneck that cannot be surpassed if the joint Nordic framework is built on a holistic understanding of the joint aspirations.

All the Nordic states have in the past expressed their aspirations to improve their preparedness to crises and shocks (pre-crisis phase), respond to them more efficiently (during the crisis phase) and recover from them as quickly and efficiently as possible (post-crisis phase). However, the current networks of cooperation do not address this life-cycle in a holistic manner. Based on the interviews conducted for this report, the recovery phase is not addressed in the context of current cooperation. Moreover, preparedness plans are too often focused on past crises and the immediate lessons learned from them instead of an all-hazards and forward-looking approach to preparedness. As progressive societies that constantly strive to improve the wellbeing and security of their citizens, it would be natural for any joint Nordic framework to also encompass the element of learning from crisis (as a continuous phase) to enable a dynamic and forward-looking development cycle of societal resilience. As such, the joint Nordic framework would naturally use the concept of resilience – the ability to anticipate crises and shocks, withstand them, recover from them and constantly improve the state of preparedness – as a basis for a genuinely Nordic model of societal resilience captured in what this report calls the **Nordic resilience framework**. This report will thus focus on resilience as a concept because it covers the various phases of preparedness and is also aligned with the terminology used in the European Union, NATO and the United Nations.

POLICY RECOMMENDATIONS

Given the fundamental points of convergence in the preparedness objectives and approaches of the Nordic states, the following policy recommendations are intended to offer pathways towards operationalising the potential for Nordic resilience cooperation. The purpose of these pathways is not to replace any contemporary cooperation that works, but instead to provide an "umbrella concept" that enables the enhancement of Nordic

cooperation in resilience and the raising of the level of ambition to a strategic regional level.

1. Nordic resilience framework agreement

Whilst the Nordic countries have existing bi- and multilateral agreements in place, these do not provide a shared framework for region-wide cooperation. Consequently, we propose the establishment of a "Nordic resilience framework agreement" that would act as an "umbrella" agreement, stating the scope, shared objectives, principles and modus operandi of regional resilience cooperation. The framework agreement would thus not replace any existing agreements. Establishing the framework agreement would, however, enable the long-term strategic development of Nordic cooperation in a purposeful and flexible manner.

Firstly, it would elevate the concept of Nordic resilience in the taxonomic pecking order, raising it on par with, if not even above, related but somewhat narrower concepts such as **civil preparedness**, **crisis preparedness** and **security of supply**. Secondly, it would provide an instrument for the Nordic countries and the self-governing regions to identify and agree upon shared long-term strategic objectives that would not compromise the existing agreements and commitments. Thirdly, the framework agreement would provide flexibility in adapting Nordic cooperation when significant changes take place in the strategic environment. The framework model would also allow for the establishment of topical, sectoral or even temporary agreements or memorandums of understanding to respond to changing circumstances, whilst adhering to the long-term roadmap agreed in the framework agreement. While some topics may be of particular interest to some parties and difficult to tackle at an all-encompassing Nordic level, the countries interested in engaging in cooperation could easily do so under the framework agreement. Considering the importance of the Haga cooperation for civil protection and preparedness, which became apparent in the interviews, any additional collaboration on societal resilience should ensure that the self-governing regions are taken seriously and included in the Haga cooperation, making their needs more visible going forward. The Haga cooperation itself could be positioned within the framework agreement.

2. Shared risk perceptions and foresight

A shared understanding of dependencies, risks, threats and vulnerabilities is essential for purposeful and sustainable Nordic resilience cooperation. Whilst each country has its own unique risks, threats and vulnerabilities, the Nordic approach to evaluate and prioritise these factors is essentially the same. Moreover, it is sufficiently clear that the volume and significance

of similarities between the Nordic countries exceed those of the differences. An enhanced awareness and understanding of shared dependencies, risks, threats and vulnerabilities may provide a sense of shared purpose and scope for the cooperation and help establish a shared situational analysis, which would better mitigate decisions that might otherwise even hamper another Nordic country's capacity to ensure the continuity of vital societal functions. These shared perceptions should extend from current to future dependencies, risks, threats and vulnerabilities to enable cooperation not only in the context of acute events, but also on a range of possible eventualities in the long term. The potential instruments for achieving them are many, including:

- Expert risk workshops
- Sharing of situational awareness
- Joint strategic foresight and scenario-building reports
- Scenario-based tabletop exercises

The level of confidentiality of the information shared and co-created may be adjusted depending on the level of ambition, but ideally it should be extended to the "secret" level. This would be justifiable considering the existing levels of cooperation. The Nordic countries share a common security environment and engage in close security, defence and foreign policy cooperation. Shared risk perceptions would both build on and enhance this existing cooperation. Moreover, the defence cooperation arrangements between Finland and Sweden, for instance, already include the exchange of classified information up to the level of "secret". What is possible in the context of defence cooperation should also be possible in the civilian context. Finally, the Nordic Security Agreement of 2013 provides a legal basis for the exchange of classified information.[6] The Finnish and Swedish pending memberships in NATO will also create new opportunities for the exchange of classified information.

3. Nordic resilience fund
Building enhanced resilience cooperation requires financial resources. To enable an adaptive and pragmatic Nordic resilience approach, the funding instruments need to match the purpose and principles of the desired cooperation. Consequently, the establishment of a "Nordic resilience fund" (NRF) should be considered. The fund could be instrumental and used in crisis situations for a wide array of operations, including joint acquisition, production, manufacturing and distribution of critical supplies. The fund could be co-financed by the participating states and

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6   Ministry for Foreign Affairs of Finland (n.d.a).

self-governing regions in the form of contributions agreed upon for each five-year term. The source of funding could be a national fund of a similar purpose, or the state budget, depending on the existing arrangements in each participating state or region. The Nordic resilience fund could also receive funding from private funds in the Nordics, if deemed acceptable. The sources and uses of funds would be detailed in the fund's statutes, and its key thematics would be divided into programmes, directed by the fund's governing body assisted by a secretariat.

As an example, the Nordic resilience fund could look at the Finnish security of supply fund – officially known as the National Emergency Supply Fund. It is an extra-budgetary fund with its own governance and is managed by the National Emergency Supply Agency (*Huoltovarmuus-keskus*, NESA). The NESA's Board of Directors, which includes members from both the public and private sectors, has the overall responsibility for oversight of the fund. The fund is financed through excise duties for electricity, coal (heating), natural gas (heating), petrol and fuel oil (diesel, light, heavy). The fee is approximately 0.5% of the retail price of the goods and is transferred to the National Emergency Supply Fund as income. The balance sheet of the National Emergency Supply Agency and the National Emergency Supply Fund totalled about EUR 2 billion in 2020.

Recent assessments of Finland's preparedness for and response to the Covid-19 pandemic have found that the flexibility of the security of supply fund has in some cases been a critical instrument as it has made it possible to take necessary measures rapidly.[7] In the early stages of the pandemic, the use of the National Emergency Supply Fund ensured, for example, the continued operation of maritime transport between Finland and Sweden and Estonia, which was essential for the continuity of the Finnish freight transport system. The fund is also utilised to finance public-private cooperation such as collaborative development programmes and to cover stockpiling costs, and it may be used to partially fund manufacturing capabilities.

Other, similar examples include emergency finances across the world, such as the grant programme administered by the Federal Emergency Management Agency (FEMA) in the United States. New Zealand has also established a resilience fund under its Civil Defence Emergency Management (CDEM) Act (2002). The CDEM Resilience Fund has annual application rounds, offering funding opportunities to projects that improve emergency management capability and contribute to resilience.[8] The grants approach ensures that the use of the finances meets the purpose of the

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7   See, for instance, Ministry of Economic Affairs and Employment (2022) and National Audit Office of Finland (2021).

8   National Emergency Management Agency (n.d.b).

Fund. In the case of the suggested Nordic resilience fund, the applications could be evaluated by designated experts from the Nordic countries and the funding decisions made by the Board of Directors.

4. Nordic resilience public–private network

In the Nordic countries, critical societal functions and security of supply largely rely on private companies as the primary producers of critical products, services and know-how. Consequently, impactful resilience cooperation would by default require strong and practical collaboration between the private and public sectors. Whilst it is the task of individual governments to organise public–private cooperation nationally, various critical Nordic flows are principally operated and enabled by private companies that have business operations in all or most of the Nordic countries. Hence, there would be economies of scale from bringing these companies together at the Nordic level. The resilience private–public network could focus on security of supply, which currently is not sufficiently ensured and it could be connected to the expert network consisting of representatives of the authorities and aiming at shared risk and situational awareness, joint exercises and knowledge sharing. The network could also coordinate public–private exercises, including ones that bring together operational, societal and governmental actors at the Nordic level, and thus encompass security of supply issues more decisively, for currently there is no formal cooperation around them (cf. the Haga cooperation). The Nordic resilience fund could cover the cost of the network and could also be used towards financing joint capabilities such as flexible manufacturing capabilities and pooling of critical materials, equipment and parts in cases where clear justifications exist and market regulations do not dictate otherwise.

RESEARCH FRAMEWORK, OBJECTIVES, METHODOLOGY AND MATERIALS

The starting point for this report is the assumption that the Nordics are, by and large, geographically remote and relatively sparsely populated countries and thus critically dependent on their international linkages and networks. They cannot be self-sufficient in many critical sectors and are thus dependent on the import of various resources, goods and services. Yet, the fragility of these global linkages – fully demonstrated during the Covid-19 crisis and most recently during the Russian aggression in Ukraine with its reverberations for energy and food security around the world – puts the Nordics' security of supply and crisis preparedness at risk.

As such, this report is grounded in multidisciplinary studies on interdependence and aims to produce theoretically suggestive as well as empirically justified findings concerning Nordic resilience. The report's analytical approach derives from recent research on interdependence and connectivity, which has highlighted how states need to manage their interdependencies to maintain crisis preparedness and economic resilience.

Traditionally, studies of interdependence have put great faith in globalisation.[9] The view has been that global supply chains eliminate redundancy and give rise to a tangled web of interdependence that integrates nations into the liberal, rule-based order, making coercive strategies obsolete.[10] From this perspective, it becomes imperative for states to connect to the flows of goods, resources, capital and data crisscrossing the globe. National self-sufficiency and other traditional state solutions are rendered increasingly ineffective by this global interconnectivity. Even critical infrastructure benefits from being globally spread as cost efficiencies become available in global value chains.[11] The image becomes one of "complex interdependence".[12]

Yet, this view has come under criticism in recent years for overlooking the risks involved in downplaying or even abandoning strategic autonomy. Interdependence has not produced a "flat" world of symmetric power relations and cooperation. Instead, asymmetric dependencies persist, and these can be manipulated, exploited and weaponised for strategic leverage by the less vulnerable parties in these relationships.[13] In such a situation of "*competitive interdependence*", states that fail to balance against dependence run the risk of having their strategic autonomy circumscribed.

This strategic aspect of global interdependence has been highlighted not only by the intensified geoeconomic competition among states such as the US, China and Russia during the 2010s, but also more recently in the context of the ongoing Covid-19 pandemic and Russia's aggression against Ukraine. As witnessed during the pandemic, nation-states have made a comeback as they have reacted to the emerging health threat by pursuing their own short-term interests. Instead of increased international coordination and interconnectivity, the pandemic led to a patchwork of public policy responses with varying success and brought about "vaccine nationalism" and a wholesale crisis of international governance and the

9   See, for example, Keohane & Nye 1977; Khanna 2016.

10   Slaughter 2017; Ikenberry 2011.

11   Fjäder 2018.

12   For a seminal analysis, see Keohane & Nye 1977.

13   Leonard 2016; Farrell & Newman 2019; Wigell et al. 2018; Wigell 2019.

liberal order.[14] To a certain extent, even the Nordic region has seen a weakening of coordinated, cross-border cooperation. The setting is further complicated by the deepening ecological crisis, which will only increase systemic and strategic risks in the coming years. Both the consequences of the environmental change itself and the vast structural changes needed to mitigate it will change and imperil global flows and security of supply around the world, including the Nordic countries.[15]

In general, the Nordics may be relatively well positioned to face the disruptive changes in their operating environment. As a feature of their whole-of-society approaches, the Nordics have preserved some elements of the traditional security of supply and national crisis preparedness thinking adopted during the Cold War period. A key feature in Nordic security planning has been the recognition of various scenarios in which international links and logistical lifelines are disrupted or even cut altogether.[16] Especially in Finland, the crisis preparedness system still includes an emphasis on self-sufficient security of supply for a limited period of time, including material preparedness through stockpiling.

However, in today's "hyper-connected" world, where most critical functions of society are operated and managed by private sector actors, who in turn are highly dependent on global supply chains, public-private cooperation in supply chain management has become paramount. This equation of increasing complexity and disruptive structural dynamics entails that the Nordics will need to learn how to manage competitive interdependence in the age of flow disruptions by ensuring that their international connections and flows are as efficient, steady and resilient as possible. A central challenge is the question of how to balance the benefits of global and regional connectivity with the risks that emerge from it.

Resilience has been highlighted as an effective response to the complexity, dynamism and uncertainty of the contemporary strategic environment.[17] Whilst the definitions of resilience vary greatly depending on the context of use, and the body of resilience research literature is extensive, we have chosen to focus on academic and policy literature that specifically addresses resilience in the context of national security and preparedness, as well as disaster resilience and public-private partnerships.[18] In addition, this study uses several reports already published

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14   Hegele & Schnabel 2021; Gruszczynski 2021; Hafner 2020; Levy 2021; Maull 2021.

15   Hakala et al. 2019a.

16   Hakala et al. 2019b.

17   See, for instance, Fjäder 2014; Kaufmann 2013.

18   See, for instance, Martin-Breen & Anderies 2011; Dunn-Cavelty & Suter 2009; Paton & Johnston 2001; Fjäder 2021.

on Nordic security of supply and civil preparedness cooperation.[19] For example, the *Critical Nordic Flows* report[20] explores the ways in which Finland, Norway and Sweden could deepen their trilateral cooperation to prepare for potential disruptions to cross-border flows of critical goods and services.[21] FIIA has also published extensively on the topic.[22] In addition to the Nordic level, there are a multitude of government reports and studies conducted by various research institutes, agencies and stakeholders nationally, which are referred to in this study.

Against the backdrop of the Covid-19 crisis and Russia's aggression in Ukraine, crisis preparedness and security of supply have now taken on a new urgency. The Covid-19 crisis has illustrated that there still is unused potential for deepening and strengthening Nordic cooperation. Finland's and Sweden's imminent NATO accession will further enhance the practical possibilities for such enhanced cooperation. It is with this potential in mind that the present report investigates the security of supply and crisis preparedness models in the Nordic countries, including the self-governing regions of the Faroe Islands, Greenland and Åland, and reviews the existing and future potential for Nordic cooperation within this field. The report has been structured with a view to advancing a shared conceptual and practical understanding of the notion of security of supply and crisis or civil preparedness, as well as to providing practical recommendations on how to strengthen civil preparedness and supply security practices and cooperation in the Nordics.[23]

Based on extensive field research into the agencies and policies directing crisis preparedness and security of supply in the Nordics, the present study purports to provide an in-depth comparative analysis of Nordic resilience. The field research was carried out by the research team in 2021–2022. Across the Nordics, interviews were conducted with experts and key policymakers, as well as delivery personnel involved in crisis preparedness and security of supply. To complement the interview evidence, various documentary sources were reviewed and a focus group workshop organised to discuss findings and evaluate the potential for enhanced Nordic cooperation. Together, the interviews, documentary research and focus group discussions served the purpose of triangulation, helping increase the credibility of the findings and recommendations (the precise research methods will be described below). As a whole, the

19   See, for example, Nordforsk 2021.

20   Aula et al. 2020.

21   See also Berling & Petersen 2020; Laakso 2019; Pursiainen 2018; Creutz & Åkermark 2021; Enestam 2021.

22   See, for example, Aaltola et al. 2016; Hakala et al. 2019a; Hakala et al. 2019b; Mikkola et al. 2018.

23   As will be elaborated later in this report, a variety of terminologies are used to describe the various models and functions. Hence, the broader umbrella term used in the report is resilience.

research provides a wealth of new comparative empirical data with regard to Nordic crisis preparedness and security of supply.

The specific aims of the report, and more broadly the entire research project, were to:

1. Develop an empirically informed assessment of significant disruptive systemic and strategic drivers of international origin that affect Nordic crisis preparedness and security of supply;
2. Map and critically assess the existing Nordic crisis preparedness and security of supply models in light of those disruptive drivers and threats;
3. Evaluate the current status of and future potential for Nordic cooperation in key sectors of critical services and capabilities; and
4. Provide up-to-date knowledge and practical recommendations to Nordic policymakers regarding best practices of crisis preparedness and security of supply based on a Nordic comparative analysis, as well as ways to strengthen Nordic crisis preparedness and security of supply cooperation.

Specifically, the analysis in this report is based on three data gathering methods: (1) document review; (2) expert interviews; and (3) focus group study. Together, these methods enable a comprehensive comparative analysis of the Nordic civil preparedness and security of supply systems, their drivers and external operating environment, as well as the current and future potential for Nordic resilience cooperation.

When conducting the document review, a challenge was that the countries differed in terms of published or publicly available documents and reports regarding civil preparedness and security of supply[24]. Another challenge was linguistic, specifically concerning the translation of specific terms into English, since, as will be elaborated later, understandings of certain concepts vary between different actors and countries.

The expert interviews were designed in a semi-structured format consisting of a series of predetermined but open-ended questions.[25] Semi-structured, qualitative interviews have been found to provide a suitable method for accessing individuals' attitudes, interpretations of events, understanding and values.[26] The project team developed the interview questions (see Appendix 1) building on the understanding derived from the document review and a selected number of preceding background interviews. With this approach, the project team was able to fill

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24 Several of the Greenlandic governmental websites that contained information and reports relevant for the study became unavailable during the research process, thus limiting access to official information.

25 Given 2008, p. 810.

26 Byrne 2016.

information gaps, gain a more grounded understanding of the matters at hand and gather fresh insights into the potential for Nordic resilience cooperation.

The interview questions were divided into three sections: i) national policies and the operational environment; ii) Nordic cooperation; and iii) other issues. However, since it is not always possible to know exactly which questions to ask before starting the research,[27] questions were modified or added when necessary to better reflect the interview findings and research objectives. The interview questions were sent to the participants beforehand, along with other information on the research project.

The initial people contacted were identified through a mapping process based on the document review, reports available online and the background interviews. At the end of each research interview, the project team used the so-called snowballing method, in other words, asked the interviewees to suggest other people to participate in the research. Snowball sampling is particularly useful when one wants to access members of a specific community or group.[28] With the help of this method, the project team received further recommendations on whom to talk to and was able to ensure that possible gaps in identified actors would be covered. However, finding proportionally equal numbers of respondents proved somewhat challenging in some of the countries and regions, despite vigorous efforts. Snowball sampling may also entail weaknesses in terms of representation or oversampling, which the project team tried to take into consideration when thinking about potential additional interviewees. The report has not been sent to the interviewees for reviewing their paraphrased interview statements.

The project team conducted altogether 12 background interviews with 17 interviewees and 41 expert interviews with 68 interviewees, resulting in a total of 53 interviews and 85 interviewees. Roughly half of the interviewees (40) were women. The interviews were scheduled to take up to an hour. While most of the interviews were conducted within that timeframe, the length did vary from 30 to 90 minutes. With some exceptions, most interviews were conducted in English for research purposes because the terminologies used in each country vary, and some English terms are understood differently, which is also one of the conclusions in this report. Ideally, respondents would have been able to express themselves in the language they were most comfortable with. However, it is our understanding that the use of English did not prove to be an insurmountable problem in expressing views.

27 Taylor 2015.

28 Ibid., p. 815.

All the expert interviews were conducted on a voluntary basis, based on informed consent asked and gained separately in each interview. The interviews were conducted anonymously, and no names or direct citations are used in the report, which was also communicated to the respondents before each interview. None of the interviews were recorded. To ensure extensive notes, the research team tried as far as possible to have a minimum of two people present in each interview. To ensure the security of the information handled during the project, the research data protection guidelines laid down in the EU Directive 95/46/EC and the Finnish Personal Data Act (523/1999) were used as guidance. The Finnish Institute of International Affairs also follows the official information security and archiving practices stipulated by the relevant Finnish government guidelines and standards.

Finally, the focus group study was implemented by organising a workshop in Helsinki in April 2022 to validate and test research findings and gather views from experts on policy recommendations. A total of 11 selected experts from the Nordics participated in the workshop. The workshop was held under the Chatham House rule. The participants were divided into three groups, each of which were given individual tasks designed to provide the researchers with up-to-date information about the national systems and perspectives, as well as to provide further insight into specific topics.

All in all, the in-depth qualitative research methods used in this report were considered especially appropriate for the research perspective adopted in this study, which put strategic-level policy considerations at the centre of analysis, seeking to infer how they are shaped by structural conditions and aiming to identify best practices and the potential for Nordic resilience cooperation.

STRUCTURE OF THE REPORT

The report has been structured with a view to its research objectives, namely to assess disruptive external drivers that affect Nordic preparedness, map existing preparedness in light of those drivers, and evaluate the current status and future potential for Nordic cooperation and ways to strengthen it.

The first chapter focuses on Nordic threat perceptions with the aim of recognising similarities in the prioritised dependencies, risks, threats and vulnerabilities, as well as in the underlying approaches concerning resilience to them. In recent years, threat perceptions in all the Nordic countries have changed, first due to the Covid-19 pandemic and in 2022

due to the large-scale military invasion of Ukraine by Russia. While the pandemic highlighted the need to prepare for unconventional threats such as health crises and supply chain disruptions, the war in Ukraine has also brought to the fore the importance of maintaining more traditional security capabilities. All the Nordic countries apply an all-hazards approach in their preparedness planning, which means that they are able to simultaneously recognise and prepare for a wide range of threats, whether of natural, technological or societal origins. This shared approach on threat perceptions provides potential to strengthen Nordic cooperation while also potentially achieving even better risk assessment and situational awareness through joint work. Among other things, this could mean enhanced sharing of situational awareness and joint foresight and scenario reports, as recommended above.

The second chapter analyses the key concepts and ideas behind preparedness and security of supply policy in the Nordics. Although there is no common Nordic terminology on crisis preparedness or security of supply, important commonalities exist in the actual conceptual approaches on and ideas behind national crisis preparedness. First, total defence is a concept that most of the Nordic countries share, in one form or another. As it includes a strong element of civil defence, this concept is often linked to the notion of societal security, another concept broadly shared by many Nordic states. Closely linked to this is the notion of civil preparedness, which is also commonly used in the Nordics and closely related to the whole-of-government and whole-of-society approaches as well as the concept of comprehensive security. Crisis preparedness, on the other hand, is often used interchangeably with disaster or emergency preparedness. Security of supply, in turn, generally refers to the availability of a product, service or function, even during more severe disruptions. However, the more precise connotations of the term strongly depend on the context in which it is used. Finally, the concept of resilience has become increasingly common in policy discussion and research, and it also has different connotations in different contexts. However, this concept is one that Nordic cooperation could use as an umbrella concept for enhanced security of supply and crisis preparedness cooperation. Common Nordic values and welfare states and the shared threat environment provide a basis for enhanced cooperation, and the shared notion of societal security and whole-of-society approach also constitute a common ground for further conceptual work to build an increasingly joint approach to Nordic resilience.

The third chapter analyses the national actors and structures in each of the Nordic countries and specific self-governing regions, notably the Åland Islands, the Faroe Islands and Greenland. At the outset, the report

recognises that the national systems are very different, shaped by different experiences, strategic cultures, geographic locations and international partnerships. These divergences impact the terminologies used for various functions ranging from civil and crisis preparedness to civil protection and crisis management, which are further complicated by the different languages and thus different understandings of the English translations. When it comes to the division of labour and responsibilities, all the systems remain sectoral and are divided into several layers. In addition to municipalities, regions and governments, civil society and the private sector are also involved to a varying extent and based on various arrangements. However, they all aim to ensure the functioning of society in times of normalcy, crisis and war. Herein also lies the holistic approach that combines the civil and military aspects of preparedness, also called total defence or comprehensive security, which reflect the idea of having a system in place that is prepared for and can withstand and recover from a broad range of threats. It would be useful to further compare and clarify the national actors and their responsibilities at the Nordic level, particularly to identify counterparts for cooperative initiatives or projects. This could also better enable lessons learned to be shared when national systems are rebuilt or changed.

The fourth chapter considers vital functions of society and the ways in which they are used in crisis preparedness in the Nordics. At present, there is no common understanding of or framework for critical functions among the countries. However, their existing systems have similarities, and the countries have been influenced and inspired by one another's examples. Notably, all the Nordics base their civil preparedness on concepts of societal security, in which wider societal involvement in the safeguarding of vital functions is considered essential. The idea of vital functions also enables and supports the characteristically Nordic all-hazards and whole-of-society approaches in preparedness planning. While some discussion and information sharing on vital functions have taken place particularly among Norway, Finland and Sweden, there is significant potential to increase Nordic cooperation on the topic. In particular, increasing the exchange of information and cooperation would contribute to the development of each country's systems. The Nordic discussion can also benefit from international processes such as the EU's CER Directive[29] on the resilience of critical entities and NATO's baseline requirements. This is especially the case now that Finland and Sweden have applied for membership in NATO.

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29   Council of the EU 2021.

Chapter five takes a closer look at private–public partnerships and cooperation in relation to preparedness, a key theme arising from the interviews for this report. By and large, the Nordics are relatively small and open economies, highly reliant on well-functioning international markets. However, the concrete organisation of public–private cooperation varies between each country and is challenged, for example, by the market neutrality principle, geoeconomic competition and the question of who absorbs the possible costs of increasing private sector preparedness. These issues are connected with the fact that critical functions in society, which were previously the responsibility of the state or state monopolies, are nowadays to a large extent in the hands of the private sector, and the organisation of civil preparedness has changed since the end of the Cold War. While this not only emphasises the importance of the private sector's own preparedness capacity and risk assessment to ensure its capability to compete on the market, it also highlights the vulnerabilities that insufficient preparedness on the private side may impose on the state that is reliant on those supply lines or functions. Preparedness and crisis response therefore require extensive collaboration among authorities, businesses and industry organisations.

Chapter six analyses the Nordic states' international cooperation in security of supply and preparedness. The Nordics already have well-functioning regional and bilateral structures and formats for security of supply and preparedness cooperation. This cooperation takes place in a variety of formal and informal settings and includes a plethora of arrangements covering bilateral, multilateral and regional agreements and forums both within and beyond the Nordics, most notably in the EU and NATO structures. The interviews identified a broad and strong willingness across the Nordics to increase Nordic cooperation. Further cooperation could be built on the societal similarities and shared values. One important similarity is the relatively high level of trust in government, which is seen as a valuable asset to societal resilience. Yet, it was noted that without a concrete set of priorities and resources both at the national and Nordic levels, the work on preparedness might be organised sub-optimally and only based on the most urgent needs. The interviews also identified some important elements in further enhancing the cooperation between the Nordics. These included the establishment of a network or permanent forum for expert exchange and joint exercises, a better mapping of relevant actors in different Nordic countries, as well as long-term funding allocated specifically to Nordic cooperation.

The last chapter concludes the report by discussing the prospects for enhanced Nordic resilience cooperation, especially in light of Russia's war of aggression in Ukraine. The war has further showcased the importance of

resilience cooperation and precipitated Finland's and Sweden's decision to apply for NATO membership. The chapter argues that the accession of Finland and Sweden will make Nordic resilience cooperation even more relevant as the region will become strategically more important from a Russian perspective. The chapter revisits the policy recommendations presented above from the perspective of this changing regional strategic environment, giving further weight to the importance of Nordic resilience cooperation.

1 THREAT PERCEPTIONS

INTRODUCTION

Threat perceptions have been in flux in the Nordic countries during the past years. First, the Covid-19 pandemic brought about a variety of issues from a health crisis to supply chain disruptions. In 2022, the Russian attack on Ukraine placed a new urgency on more traditional geopolitical security threats. In the shifting geopolitical setting, it is increasingly crucial for the Nordic countries to monitor emerging threats and antici-pate their consequences. To a considerable degree, the threats are shared across the Nordics, suggesting the countries could work together to better prepare for them.

The Covid-19 pandemic has brought the importance of crisis prepar-edness to the fore. In particular, the pandemic led to disruptions in border regions as borders were shut down, interrupting normal interactions and links that sometimes have played a role in safeguarding vital functions of society. In preparation for future crises, it is clear that better management of these kinds of risks and emergencies can only be achieved through strengthened Nordic cooperation.

The Russian invasion of Ukraine, on the other hand, has brought about a new focus on more traditional security of supply, including the necessity of ensuring the supply of military equipment in case of a war situation. Any prolonged conflict will need a steady stream of materiel from abroad as the war in Ukraine shows. Herein, Nordic cooperation on such security of supply may prove vital for the countries involved.

All the Nordic countries have traditionally put an emphasis on an all-hazards approach when it comes to dealing with threats. This means

that they all consider a wide range of threats and plan preparedness in a way that builds capacity to manage crises originating from natural, technological and societal causes. This shared approach on threat perceptions provides potential to strengthen Nordic cooperation while also potentially achieving even better risk assessment and situational awareness through joint work. In concrete terms, the countries could aim to increasingly share situational awareness and engage in joint foresight and scenario building.

This chapter will first consider the extent to which risk assessment is carried out in each of the Nordic countries in practice. It will go on to discuss prevailing threat perceptions, pointing out common points of focus, changes over time and reactions to the evolving security situation. The chapter will conclude by outlining lessons learned from the existing risk assessment work and proposing ways to further develop Nordic cooperation on threat perceptions.

RISK ASSESSMENTS

All the Nordic countries carry out some form of national risk assessment. In the Nordic EU member states, these are also linked to the European Union Civil Protection Mechanism (EUCPM), which obliges all the member states to regularly assess risks that may create the need to request civil protection assistance from other EU members. Norway and Iceland also carry out risk assessments of their own. Some of the Nordic countries also have additional processes for identifying more specific threat scenarios.

In **Sweden**, authorities responsible for monitoring[30], county councils, as well as regions and municipalities are required by law to make risk and vulnerability assessments.[31] Some of these are further reported to the Swedish Civil Contingencies Agency (*Myndigheten för samhällsskydd och beredskap*, MSB), which compiles a national risk and capacity assessment to be submitted to the government.[32]

In **Norway**, ministries, regions and municipalities are required by law to make risk and vulnerability analyses. An important input to such analyses are the crisis scenarios prepared annually by the Norwegian Directorate for Civil Protection (*Direktoratet for samfunnssikkerhet og beredskap*, DSB). The latest overall assessment of potential threats

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30   And other authorities when requested by MSB's decision.

31   For more, see MSB (n.d.a).

32   For the most recent one, see Swedish Civil Contingencies Agency 2021c.

and hazards in various sectors of society was published in 2019.[33] The report, titled *Analyses of Crisis Scenarios 2019,* presents 25 scenarios in 16 different risk areas, ranging from extreme weather and flooding to cyberattacks. The aim of the analysis is to illustrate the complex and cross-sectoral character of the consequences of threats and the interdependence of the societal functions that could be affected. The report therefore emphasises the need to coordinate preparedness actions across sectors, while also clearly dividing and assigning responsibility for them. The methods through which the scenarios have been developed are described in a separate document published by DSB.[34] The process consists of multiple phases from the statement of objectives and identification threats to scenario development and risk analysis. One element in the risk analysis are analysis seminars, at which the potential consequences and impacts of the scenarios are discussed with experts and professionals from various sectors and authorities. The analysis itself proceeds through the estimation of vulnerabilities, the analysis of probability and consequences, and the estimation of risk.[35] The Norwegian Police Security Service, the Norwegian National Security Authority and the Intelligence Service of the Norwegian Armed Forces also publish annual threat and risk reports which inform the public and private sectors and the authorities responsible for civil preparedness.

In **Finland**, preparedness policy and planning are grounded in the analysis of the current and foreseeable status of the security environment and the related risks for national security. The 2017 government resolution entitled *Security Strategy for Society*[36] uses the 2015 national risk assessment[37] and the threat models described in the 2010 *Security Strategy for Society*[38] as a basis for its preparedness policy. In the 2017 security strategy, it is stated that the national risk assessment should be expanded to better serve preparedness and contingency planning, and that the upcoming national risk assessment will cover all the threat scenarios presented in the security strategy. The national risk assessment was updated in 2018, and the document is in the process of being further updated.[39] The revision of the security strategy is also currently underway. This means that the Finnish national preparedness priorities and

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33   Norwegian Directorate for Civil Protection 2019b.

34   Norwegian Directorate for Civil Protection 2019a.

35   Norwegian Directorate for Civil Protection 2019b.

36   The Security Committee 2017.

37   Ministry of the Interior of Finland 2016.

38   Ministry of Defence of Finland 2010.

39   Ministry of the Interior 2019.

policy are currently under evaluation. Russia's attack on Ukraine and the consequent domestic discussion on NATO membership that culminated in the widely accepted decision to apply for membership indicate a shift in both threat perceptions and future policies, but as the NATO application process is still ongoing, its eventual policy outcomes remain to be seen. A government report on the changes in the security environment observes that the security situation in Europe and Finland has significantly deteriorated and is more difficult to predict than at any point since the Cold War.[40]

Denmark recently published its most recent relevant strategic document – *Nationalt Risikobillede 2022* (*National risk profile 2022*)[41] – which is the third assessment in line and provides an update to the previous versions from 2013 and 2017. It was produced by the Danish Emergency Management Agency (*Beredskabsstyrelsen*, DEMA) and is based on the agency's ongoing analysis of the most significant threats that could affect Danish society. The report is intended for use in preparedness planning by policymakers, central, regional and municipal authorities, as well as private, public and civil society actors. The assessment outlines 14 possible threat events and evaluates their potential consequences. It only covers Denmark and not the entire Kingdom. The report *Retningslinjer for Indsatsledelse* (*Guidelines for incident management*) includes a brief overview of Faroese risk assessments.

Iceland has also produced national risk assessments since 2008, with the latest update published in 2016.[42] The assessments are led by the Department of Civil Protection and Emergency Management (*Almannavarnir*) at the National Commissioner of the Icelandic Police in cooperation with local Civil Protection Authorities. In addition, all the district-level Civil Protection Committees participate in the analysis. The aim is to gain an overview of the hazards threatening Iceland as well as to evaluate associated risks.

Nordic threat perceptions and scenarios

All the Nordic countries base their risk assessments and underlying threat perceptions on a broad concept of security. Sweden is illustrative in this regard. Its definition of security incorporates war and armed attacks, but also issues such as information warfare, terrorism, weapons of mass destruction, disruptions in information flows, financial crises, pandemics,

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40   Government of Finland 2022.

41   Danish Emergency Management Agency 2022.

42   Department of Civil Protection and Emergency Management & the National Commissioner of the Icelandic Police 2016.

threats against human rights and democracy, and climate change.[43] The variety of perceived threats was also reflected in the interviews carried out with preparedness experts across the Nordics.

In the national assessments and the interviews conducted for this report, **cybersecurity** is raised as a major topic. Across the Nordics, it is considered particularly important because of its interconnections with so many of the vital societal functions such as energy production, banking services and healthcare, and it thus has the potential of being a source of significant disruption. Cyberthreats are also characteristically cross-sectoral and cross-border. Our interviewees pointed out that some industries in Sweden are facing daily cyberattacks on their systems.[44] This concern has led the Swedish Government to initiate the establishment of a national cybersecurity centre, which aims to strengthen the combined capability of various authorities to respond to cyberthreats.[45] A similar body has been established in Norway.[46] Experts interviewed for this report noted how cyberattacks are a relatively cost-effective way to cause disruption and therefore constitute a threat that is only going to expand.[47] Cybersecurity was also linked to digitalisation, automatisation and the so-called fourth industrial revolution (or industry 4.0), among other things, and as such, it is a highly relevant issue for all the highly digitalised Nordic countries.

In Norway, the 2019 document on crisis scenarios points out digitalisation among a number of emerging trends or "developments in the risk profile", suggesting it may bring new vulnerabilities through cyberattacks, for example. This will also have an impact on preparedness arrangements in crisis situations.[48] Our interviewees also acknowledged digitalisation as an issue that will increasingly need to be addressed in preparedness planning, especially as the digitalisation of society continues to accelerate.[49] Meanwhile, the Danish Centre for Cyber Security published a report in 2022 pointing out that the threat levels caused by cybercrime and cyber espionage remain very high, naming Russia and China as potential state-level perpetrators.[50] Similarly, the Swedish Security Police has pointed to the increasing threat of cyber espionage by China, Iran and

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43 See Anderson & Jeppson 2018; Government of Sweden 2017.

44 Interview, 13 December 2022.

45 Nationellt cybersäkerhetscenter website 2022.

46 Norwegian National Security Authority (n.d.)

47 Interview, 21 January 2022.

48 Norwegian Directorate for Civil Protection 2019.

49 Interviews, 29 November 2021 and 30 November 2021.

50 Danish Centre for Cyber Security 2022.

Russia.[51] In Finland, the 2018 national risk assessment evaluates emerging trends. They include digitalisation, along with hybrid operations climate change and the transformation of the security environment, all of which may have wide-ranging impacts on threats and scenarios. The emerging issues associated with digitalisation have also been recently acknowledged at the Nordic level in the *Critical Nordic Flows* report.[52]

Another threat emphasised in both the national risk assessments and the research interviews are **climate change and other environmental hazards**. In the recent Norwegian crisis scenario report, climate change is included among the main trends to be followed because it is expected to increase the risk of occurrence and severity of natural hazards such as flooding, landslides and avalanches. In addition, it may result in global developments that may have consequences for security of supply and migration, for example.[53] Some of the interviewed experts further pointed out that the consequences of climate change and the necessary mitigation measures for society are not yet understood well enough.[54]

Our Swedish respondents saw climate change as a particularly fundamental and existential threat, as well as one that affects the whole humanity. They also associated it with other transnational challenges: besides climate change, health threats and nuclear radiation are other issues that know no borders.[55] Similarly, Norwegian interviewees pointed out how climate change could pose threats to security of supply.[56] For Danish respondents, the most profound effects of climate change were the increased risk of coastal flooding and torrential rain.[57]

In some parts of the Nordic countries, the effects of climate change are already concretely visible. Climate change is of particular concern to polar regions as temperature rises affect the Arctic considerably more compared to other regions.[58] In Greenland, the possible increase in the extraction of resources and increased investments in mining or shipping could be beneficial for the economy. However, this has already been and may continue to remain a point of contention.[59] Moreover, 80% of Greenland is covered by ice, and as climate change is causing ice sheets

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51   Adolffson 2020.

52   Aula et al. 2020.

53   Norwegian Directorate for Civil Protection 2019b.

54   Interviews, 30 November 2021.

55   Interview, 2 December 2022.

56   Interview, 30 November 2021.

57   Written comments, 4 July 2022.

58   Intergovernmental Panel on Climate Change 2019.

59   Interview, 7 February 2022; Creutz & Spiliopoulou-Åkermark 2021.

to rapidly melt, glaciers will continue to lose mass.[60] Weather patterns such as snowfall have already changed, changing the accessibility of ports in certain periods. The opening up of new shipping routes in the East and West of Greenland is a visible consequence of climate change, which leads to increasing risks of cruise ship disasters and maritime pollution incidents.[61] Wildfires have also become more common.

Similarly, in Iceland, environmental hazards have featured prominently in emergency response plans for a long time. Icelanders must cope with nature in the form of volcanic eruptions, earthquakes, extreme weather and snow avalanches.[62] Of particular and also international concern has been the possibility that the largest volcano, Katla, erupts and causes damage to lives and livelihoods. Previously, Katla eruptions have brought along ash fall, lightning hazards and a small tsunami,[63] and the effects have been felt especially in the southern and eastern parts of Iceland.[64] In 2010, the ash cloud stemming from another Icelandic volcano, Eyjafjallajökull, caused disruptions to air traffic globally.

Another major threat raised in the Nordic context is the **vulnerability of global supply chain dependencies**. In Norway, the increasing vulnerability of security of supply is an issue listed among the key trends in the threat scenarios as supply chains are long and complex, and Norway relies almost entirely on imports for some critical products like pharmaceuticals. In Iceland, supply security has received heightened attention because of real-life, abrupt events and long-term developments: environmental hazards, the Covid-19-pandemic and the increased geopolitical tensions. The pandemic crisis exposed certain vulnerabilities in the supply of medical countermeasures such as pharmaceuticals, as well as food. Although concern over access to prescription drugs has been expressed even prior to the pandemic, it has now become a topic of public discussion.[65]

Due to their geographical location, security of supply is a particularly crucial question for the Faroe Islands, Greenland and Åland. In the Faroe Islands, for example, many critical functions such as fisheries, which make up 95 % of the economy, are dependent on fuel. Hence, isolation would quickly create problems. In addition, it would hinder exports, which would quickly impact revenues due to limited storage capacity.[66]

60 Government of Iceland 2021; Intergovernmental Panel on Climate Change (n.d.).

61 Written comments, 4 July 2022.

62 Landsbjörg (n.d.).

63 Ibid.

64 Bird & Gísladóttir 2012.

65 Ibid.

66 Interview, 31 January 2022.

Likewise, Åland, an island region, is vulnerable to disruptions in shipping and transport. In the event of an exceptional situation that continues for a long time, necessary external expertise may not be available in Åland, and it could have serious consequences for its industry. For example, during the pandemic when borders were closed between Finland/Åland and Sweden, Åland had challenges with receiving spare parts and necessary know-how.

Due to the issues related to security of supply, some stakeholders called for better stockpiling capacities.[67] Others did not consider stockpiling to be a solution.[68] Notably, the Faroe Islands are highly dependent on well-functioning supply chains and air and maritime connections in particular. Because of limited storage capacities, products must be both imported and exported as the storage time of frozen fish is limited.[69] Disruptions to export opportunities would have great impacts on the Faroe economy.

Overall, security of supply is particularly relevant for the private sector, which is largely dependent on international flows of goods. The Nordic countries are in general highly dependent on both import and export and lack in-country production in many necessary supplies.[70] From the private sector point of view, these international dependencies become increasingly difficult to tackle when civil preparedness or crisis management is carried out at the national level. As a response, companies seek to diversify or change their supply chains, or consider producing or procuring closer to home. Reshoring, however, also carries its own challenges and is not always viable.

The **changing global security environment** has had a varied impact on the threat perceptions in the Nordics. In Sweden, the changes in preparedness policy underway have largely been related to changes in the assessment of the security environment. For example, Russia's aerial exercise/simulated nuclear attack against Sweden in 2013, its repeated military aggressions against Ukraine since 2014 and its involvement in the Syrian civil war since 2015 are seen to have significantly affected the security environment in Europe, including Sweden's own neighbourhood, and therefore to have catalysed Sweden's current efforts to rebuild its total defence system. Sweden has reactivated a limited compulsory military service, increased its military spending, resumed total defence planning and attempted to improve societal resilience by, for example,

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67   Interview, 31 January 2022.

68   Interview, 9 February 2022.

69   Ibid.

70   Interview, 10 January 2022.

sending brochures to every household on how to be better prepared for the consequences of serious accidents, extreme weather, cyberattacks or war. Each year, authorities responsible for preparedness report their civil defence capacity to the Swedish Civil Contingencies Agency (MSB) and Swedish Government Offices.

Following Russia's large-scale invasion of Ukraine on 24 February 2022, a fundamental change has taken place in the security and operating environment in Europe. In April 2022, the Finnish Government issued a report to Parliament assessing the changes in the operating and security environment and the effects of the changed security situation on the economy, resilience, security of supply, internal security, cybersecurity, hybrid influence activities and critical infrastructure.[71]

Some of the Danish interviewees mentioned traditional geopolitical security threats in the context of Russia's invasion of Crimea and the conflict in and around eastern Ukraine, which started already in 2014. Russia's hostile manoeuvring in the past years has been viewed as a factor that might potentially increase Denmark's interest in Nordic security-related cooperation. This interest also extends to NATO and EU cooperation, as seen in the May 2022 voting result in which the Danish opt-out from the EU's Common Security and Defence Policy (CSDP) was rejected by a large majority of voters. Altogether, the identified threats and risks to society are both domestic and international problems, which require collaborative solutions. This was also recognised by the respondents.

Geopolitical instability has also raised concern in Iceland.[72] This was also highlighted by Iceland's Defence Minister at the annual session of Norden in 2021. The following three security concerns, shared by all the Nordic countries, were pointed out: Russia, Lukashenka in Belarus and climate change.[73] It is feared that the spillover effects of the geopolitical conflict will not be limited to mainland Europe, but may affect Iceland's supply chains by delaying petroleum imports, for example.[74] The vast sea area around Iceland also hosts important transport routes and subsea data cables, which provide essential international links for the country. Data cables were also mentioned as a concern in Åland, where the breakdown of communication links is perceived as a major threat.[75] This issue has also

71   Government of Finland 2022.

72   Interviews, 1 February 2022 and 27 January 2022.

73   The Icelandic Minister of Defence mentions three common security threats for the Nordics: Russia, Belarus and Lukashenka, and climate change; Nordic Council of Ministers 2021.

74   Interview, 1 February 2022.

75   Interview, 17 February 2022.

been previously raised with regard to the mainland of Finland,[76] and it is a threat equally shared by all the Nordic regions and countries.[77]

These geopolitical concerns have also been noted in the Faroe Islands, Greenland and Åland. Even in regions such as Åland, where there is no military presence, the international security situation has raised discussions about increasing military preparedness.[78] Meanwhile, geopolitical posturing in the broader region renders the Faroes vulnerable to disruptions in supply. What also causes concern are the spiralling sanctions between the EU and Russia and China, the latter two of which are also important export markets for Faroese fish. The Parliament of the Faroe Islands has passed a bill authorising the Government of the Faroe Islands to implement sanctions against Russia and Belarus, and Faroese sanctions will largely follow and resemble those of the EU and like-minded partners.[79] The parliament did not prohibit the export of fish products, which make up 95% of Faroese exports, to Russia, but fish export to Russia has dropped significantly after the war began.[80]

Pandemics and other health threats were also identified in the countries' risk assessments and mentioned in the interviews. In Finland, Denmark, Norway and Iceland, these were considered to be among the main threats.[81] This was also the case in risk assessments prepared before the onset of the Covid-19 pandemic in 2020. In the Norwegian scenario analysis of major threats, for example, an influenza pandemic was listed as a threat with severe consequences, as well as a relatively high likelihood.[82] Yet, regardless of the prior recognition of the possibility of a pandemic, the experience of Covid-19 has also been seen as an eye-opener especially in terms of its comprehensive impacts on society as a whole. It has also changed and become intertwined with other threat perceptions: in Iceland, for example, unemployment and other economic problems associated with the Covid-19 crisis have been regarded by the general public as one of the main threats facing the population.[83] At the same time, however, interviewees also highlighted that while crisis management during

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76   Aula et al. 2020.

77   See, for example, *The Barents Observer* 2022.

78   Interview, 31 January 2022.

79   Government of the Faroe Islands 2022.

80   Government of the Faroe Islands (n.d.a).

81   Ómarsdóttir 2021, p. 13–16.

82   Norwegian Directorate for Civil Protection 2019b.

83   Ómarsdóttir 2021, p. 13–16.

the ongoing pandemic needs attention, the possibility of new, emerging and possibly unknown threats should not be overlooked.[84]

Finally, in some Nordic countries, **hybrid interference** (or grey zone threats) is considered a major threat.[85] In Sweden, for example, hybrid interference has increasingly been highlighted in defence planning, including the capacity to respond to grey zone threats without having to announce a higher level of alert.[86] The regional security policy environment was also mentioned in several interviews and often associated with grey zone threats. Interestingly, Sweden has a legal framework only when it comes to higher levels of alert and war. The Swedish civil preparedness system is also strictly divided into the categories of crisis preparedness and heightened preparedness. When Sweden is at war, the highest level of alert applies. Meanwhile, in Norway, attacks on civil society as part of hybrid interference were pointed out as one of the major trends driving the national threat scenarios, and it was seen as a risk particularly affecting civil actors.[87] In Finland, hybrid interference has been recognised as a potential threat in the national risk assessment, for example.[88] In addition, the possibility of hybrid influencing has been regarded as a particularly pertinent issue in connection with Finland's NATO accession process, and it involves, for example, the potential instrumentalisation of migration with the aim of causing disruption in Finnish society.[89] It is recognised that due to the changed security environment, the government must constantly assess threats, improve overall coordination, and better identify and counter hybrid threats. International intelligence cooperation plays an important role in identifying and countering hybrid threats. As a recommendation, a recent government report outlined that Finland needs to set up an arrangement for carrying out cross-sectoral vulnerability assessments and continuous monitoring of resilience. Every branch of government is responsible for contributing to the identification and reduction of vulnerabilities.

To combat hybrid threats more effectively, it is perceived important in Finland to have shared situational awareness and a cross-sectoral structure for countering such threats. In addition to up-to-date situational awareness, factors that play a key role include clear lines of authority and responsibility, sufficiently flexible and possibly partially overlapping

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84   Interview, 30 November 2021.

85   On hybrid interference as a strategic practice, see Wigell 2019.

86   Swedish Armed Forces & Swedish Contingency Agency 2021, p. 11.

87   Norwegian Directorate for Civil Protection 2019b.

88   Ministry of the Interior of Finland 2019.

89   Government of Finland 2022.

powers, and the ability to utilise the overall resources of society in an appropriate manner to repel various threats.[90]

LESSONS LEARNED FROM THREAT PERCEPTIONS

Recent years have also tested Nordic preparedness and the feasibility of prevailing threat perceptions in many ways. In particular, they have shown the varied and unexpected character of threats that may require immediate action. Our interviewees pointed out repeatedly that present-day threats tend to be complex and interconnected. Some noted the parallel occurrence of a combination of several threats as a significant risk.[91] Others questioned the feasibility of having a realistic threat perception in different sectors. With regard to grey zone or hybrid threats, the difficulty of defining who should take the lead in identifying whether a threat is military or civilian was also highlighted.[92] Current preparedness legislation in the Nordics usually does not take this challenge into account.

These complexities have also fed into preparedness planning. In Norway, for example, the idea of threat scenarios is not to chart every possible adverse event that could occur but rather to provide concrete examples to support preparedness actions. Therefore, they mainly promote preparedness to act in a crisis situation at a general level. However, it is emphasised in the Norwegian report that knowing how to act in the specific scenarios outlined will also contribute to overall preparedness. The organisations and individuals who use the scenarios are therefore encouraged to consider, among other things, how their own sector would be affected in the specific situations outlined in the scenarios and what they could do to mitigate the consequences.[93]

Overall, all the Nordic countries and regions have relatively similar threat perceptions. Although there are some differences as to prioritisation, or the details of the expected consequences of specific events, the major threats identified in all the documents and interviews overlap considerably. Cyberattacks or disruptions, climate change, the vulnerability of supply chains, geopolitical tensions, health risks and hybrid interference were considered among the major issues the countries need to deal with.

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90   Government of Finland 2022.

91   Interview, 3 December 2022.

92   Interview, 3 December 2022.

93   Norwegian Directorate for Civil Protection 2019.

At the same time, the underlying perspective in all the Nordic countries' preparedness planning appears to accept that not all threats can be precisely foreseen and prepared for. Therefore, all countries' efforts are based on an all-hazards approach, which can be seen as a common denominator and a platform for closer cooperation. The previous analysis shows that many of the threats facing the Nordics are shared by several, if not all, of the countries. Moreover, the threats are also shared in the sense that any efforts to build effective preparedness against them require, or would at least greatly benefit from, working together.

Consequently, as outlined in the introduction, a shared understanding of threats and vulnerabilities is an essential element for both enhanced preparedness and sustainable Nordic resilience cooperation. There is therefore a need for joint analysis of dependencies, risks, threats and vulnerabilities, which can further strengthen a sense of purpose in the cooperation. The work on shared perceptions should also extend to future dependencies, risks, threats and vulnerabilities to ensure a long-term perspective in preparedness planning. Based on the analysis in this report, the potential instruments for achieving enhanced shared threat perceptions include:

- Expert risk workshops
- Situational picture sharing
- Joint strategic foresight and scenario-building reports
- Scenario-based tabletop exercises

The practical implementation of such cooperation on threat perceptions would require overcoming some obstacles, which are linked to the levels of confidentiality applied, for example, but it would not necessarily require significant additional resources or new institutional structures. From the practical perspective, the Nordics may also benefit from the fact that they share a common security environment and already engage in close security cooperation. Their shared risk perceptions could both build upon and strengthen these.

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2 KEY CONCEPTS AND DEFINITIONS

INTRODUCTION

There is no common Nordic terminology on crisis preparedness or security of supply. The Nordics tend to use different terms as guiding concepts for their systems, from total defence in Sweden and Norway to comprehensive security in Finland. The same terms are sometimes used to refer to different activities, such as in the case of civil preparedness and crisis preparedness. As discussed in detail below, these divergences may reflect some of the perspectives and approaches underlying the preparedness systems in the Nordics.

Most key concepts used in Nordic civil preparedness systems originally stem from international policy or academic discourse. The terminology is context-specific and has varied applications, meaning that all-encompassing definitions are hard to come by. However, despite a certain conceptual complexity, important common elements exist in the actual Nordic approaches and ideas behind the concepts. The main concepts used in this report are briefly outlined here before discussing the ways in which they are applied in the different Nordic countries.

The concept of **total defence** is shared by all the Nordic countries in one form or another. The concept combines both military and civilian aspects of defence planning and preparation for war. It is based on another common Nordic notion – the **whole-of-society** approach – aimed at deterring aggression and responding to threats in a comprehensive manner. In all the Nordic countries, civil defence and the participation of the wider civil society in preparedness activities are seen as necessary ingredients in effectively responding to threats in the contemporary security environment,

in which the lines between war and peace are increasingly blurred, and hybrid threats go beyond the traditional use of force.[94]

As the notion of total defence includes a strong element of civil defence, it is often linked to the concept of **societal security**. This notion, too, is broadly shared by the Nordic states and has been an important building block in the wider notions of security in the Nordic countries. In its broadest sense, societal security refers to the "the ability of a society to persist in its essential character under changing conditions and possible or actual threats".[95] Especially in more policy-oriented interpretations, societal security can be summarised as society's ability to function under duress in the context of a holistic threat environment, and it thus underlines the importance of securing vital functions of society.[96]

Closely linked to this, the notion of **civil preparedness** is used, for instance, by NATO to refer to efforts to ensure that "basic government functions can continue during emergencies or disasters, in peacetime or in periods of crisis".[97] Preparedness activities aim to respond to threats and disruptions in a way that minimises their negative effects on society and individuals.[98] Civil preparedness specifically refers to the non-military aspects of preparedness, thus emphasising the role of civilian actors in enabling society to function during a crisis. Again, this notion is common to the Nordics as it is closely linked to the whole-of-government and whole-of-society approaches as well as the idea of comprehensive security, not least because it requires continuous planning and exercises between the public, private and third sectors.[99]

Crisis preparedness, on the other hand, is often used interchangeably with disaster preparedness or emergency preparedness. It refers to the ability to respond to both human-made and natural disasters and to cope with their consequences.[100] It highlights the crisis management aspects of preparedness, although it also means a continuous process of planning and building capacity.

Security of supply, in turn, generally refers to the availability of a product, service or function.[101] However, the more precise connotations of the term strongly depend on the context in which it is used. Security of

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94   Wither 2020.

95   Waever 1993.

96   Larsson & Rhinard 2021.

97   NATO 2021b.

98   Perry & Lindell 2003.

99   NATO 2021.

100 European Commission 2021.

101 Aula et al. 2020.

supply involves the important element of energy security, which means the ability of a system to "provide a flow of energy to meet demand in an economy in a manner and price that does not disrupt the course of the economy".[102] However, the Covid-19 crisis and ensuing global supply chain disruptions have highlighted the need to improve the security of supply of goods and services beyond energy. As a result, security of supply also increasingly concerns questions related to information and communication systems, financial services, logistics and other kinds of critical infrastructure. It should be noted, however, that some Nordic states – especially Finland – have applied a very broad definition of security of supply for a long time already.[103]

Finally, the concept of **resilience** has become increasingly common in policy discussion and research, and it also has different connotations in different contexts. In the EU's Global Strategy, resilience is defined as "the ability of states and societies to reform amidst an increasingly complex and unpredictable threat environment".[104] NATO defines resilience as a society's ability to resist and recover from shocks and crises, and states both civil preparedness and military capacity as crucial elements for upholding it.[105] Meanwhile, Hyvönen et al. consider resilience in the context of societal or comprehensive security and describe it as a process that comprises inherent resistance, the ability to maintain effective functioning and adaptive learning.[106] In other words, resilience should not merely be seen as a characteristic of a system or organisation, but rather as a continuous, adaptive process in itself. This concept could be used in Nordic cooperation as an umbrella concept for enhanced security of supply and crisis preparedness cooperation, as discussed in the introduction of this report. Indeed, resilience thinking seems to underpin all the Nordic preparedness systems despite the terminological variation.

COUNTRY ANALYSIS

In **Finland**, the principles guiding preparedness are laid out in the 2017 *Security Strategy for Society*. In the strategy, Finnish preparedness is grounded in the notion of comprehensive security, in which the vital functions of society are jointly safeguarded by the authorities, business

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102   Grubb et al. 2006.

103   Iso-Markku 2022.

104   European Union 2016.

105   NATO 2021a.

106   Hyvönen et al. 2019.

operators, organisations and citizens. In practice, this cooperation is operationalised through joint agreements, training and exercises, as well as contingency and preparedness planning.[107]

The comprehensiveness of the Finnish approach is illustrated by its very broad definition of security actors as "all actors taking part in co-ordinated security work or security activities closely supporting it".[108] This notion also includes individual citizens, highlighting the Finnish whole-of-society approach in crisis preparedness.[109] In a similar vein, the strategy underlines the role of business operators in the preparedness process and concludes that it is increasingly important to ensure that companies can continue their operations in times of crisis.

The notion of security of supply is a key element in Finnish prepared-ness policies, more so than in the other Nordics. The Finnish understand-ing of the notion is very broad, covering a wide range of critical sectors under this umbrella concept.[110] The Finnish National Emergency Supply Agency (NESA) occupies a central role in the security of supply system.[111] The NESA defines security of supply as a "society's ability to maintain the basic economic functions required for ensuring people's livelihood, the overall functioning and safety of society, and the material preconditions for military defence in the event of serious disruptions and emergen-cies".[112] The guiding principles of Finnish security of supply policy are further detailed in the 2018 *Government Decision on the Objectives of Security of Supply*.[113] The decision states that security of supply is based on domestic measures and resources as well as international markets. In practice, as Finland is highly dependent on exports in many critical materiel and services, securing the critical functions of Finnish society requires stable, reliable and well-functioning international connections as well as international cooperation.

From a comparative perspective, the Finnish security of supply model is somewhat unique. In contrast to the other Nordic states, a central and distinctive feature of Finnish security planning has been a scenario in which the country's international links and logistical lifelines through the Baltic Sea are disrupted, or even cut altogether.[114] As a result, the

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107   Government of Finland 2017.

108   Ibid.

109   Wigell et al. 2021.

110   Government of Finland 2018.

111   See Ministry of Economic Affairs and Employment of Finland 2008.

112   National Emergency Supply Agency (n.d.c). See also Ministry of Trade and Industry of Finland 1992.

113   Government of Finland 2018.

114   Aaltola et al. 2016; Hakala et al. 2019.

Finnish crisis preparedness system still includes a strong emphasis on self-sufficient security of supply, including material preparedness through stockpiling. More recently, however, the idea of complex continuity management has gained more importance in the Finnish security of supply paradigm, with an emphasis on supporting the business continuity management of critical enterprises.[115] However, as a result of Russia's illegal aggression in Ukraine, one can expect that Finnish security of supply will once again increasingly focus on more traditional threat scenarios and related elements of security of supply, including stockpiling and increased efforts to improve self-sufficiency in certain key sectors. Consequently, Finnish security of supply policy can be expected to once more shift its focus to aspects that more directly support military preparedness.

Åland is a self-governing region and part of Finland. It is demilitarised under international law and has no military presence. Thus, all preparedness is civil preparedness in Åland, and it is largely understood similarly to mainland Finland. As for the definition and use of the concept of security of supply, the Ålandic experts interviewed for this study stated that they use the same term and definition as the NESA. Many preparedness functions are performed jointly by the State Department of Åland (*Statens ämbetsverk*) and the Government of Åland, and this also applies to civil protection, as well as security of supply responsibilities that come under the NESA, such as mandatory storage of medicinal products and fuel stockpiling.[116] The state department provides the NESA with an annual report on preparedness planning in Åland.[117]

Similarly to Finland, **Sweden** has a long tradition of applying a whole-of-society approach in its national preparedness efforts. However, unlike Finland, Sweden radically scaled back its preparedness activities after the end of the Cold War and decommissioned its total defence system and related civil defence capabilities. There were replaced with capabilities for expeditionary missions and readiness for civil emergencies such as disasters and accidents, which were prioritised over civil preparedness. As a result of the deterioration of the Northern European security environment, Sweden is re-establishing its total defence system, with an important emphasis on civil defence. The Swedish Government bill *Totalförsvaret 2021–2025* (*Total defence 2021–2025*) states that "the starting point for the planning of Sweden's total defence should be, for at least three months, the ability to handle a security crisis in Europe and

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115   Government of Finland 2013; Government of Finland 2018.

116   Government of Åland 2000.

117   Written comments, 17 February 2022.

Sweden's neighbourhood entailing serious disruption to the functioning of society, including war for part of this time."[118]

As noted, the new total defence system also includes civil defence, which supports these activities and involves a variety of actors and the resilience of the whole society at heightened preparedness levels. This is important because currently no framework for civil defence exists after it was separated from military defence and eventually eliminated in early 2000. The legal frameworks did, however, remain in place. The Defence Commission noted in 2017 that to strengthen total defence, it would be essential to have effective and clear conditions for command and responsibility to create coordination both within civil defence and between military and civil defence. The government set up an inquiry into civil defence, the conclusions of which were published on 1 March 2021 in the report *Struktur för ökad motståndskraft* (*Structure for increased resilience*).[119]

Mostly because of the dismantling of the system, the current crisis preparedness system is largely viewed as underdeveloped,[120] and the level of preparedness varies between sectors and domains,[121] although a lot of work is underway to reform the system. In the health sector, for example, inquiries have been made into how its preparedness for future serious threats could be developed.[122] Furthermore, on 19 May 2022, the Swedish Government decided to initiate a structural reform of crisis preparedness and civil defence, which will enter into force on 1 October 2022.

The concept of civil preparedness is not extensively used in Sweden. The Swedish Civil Contingencies Agency (MSB) has, however, increasingly shifted towards using the term.[123] In addition to civil defence (see above), the Swedish system puts emphasis on crisis preparedness, referring to society's ability to prevent, resist and handle a crisis. That said, civil defence and crisis preparedness have some overlapping goals and functions, even though the former applies at higher levels of alert and the latter during crises in peacetime.[124]

In contrast to Finland, Sweden does not have any agreed definition of or concrete goal for security of supply. The Swedish experts interviewed for this report highlighted how the concept of security of supply includes

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118   Government of Sweden 2020.

119   Government of Sweden 2021c.

120   Interview, 21 January 2022.

121   Interview, 21 January 2022.

122   Government Offices of Sweden 2022a.

123   See, for example, Swedish Civil Contingencies Agency 2021a.

124   Swedish Civil Contingencies Agency (n.d.b).

everything from infrastructure to supply chains and robust procurement agreements in critical supplies.[125] Most Swedish experts also linked security of supply with resilience.[126] They wanted to underline how supply chains need to be secured both in times of normalcy and crisis.[127] This should apply to international linkages as well as to domestic distribution.[128] In general, like in Finland, security of supply is understood much more broadly than merely as stockpiling and revolving around the ability to secure necessary items and resources when needed, regardless of the state of affairs.

At present, the whole Swedish system is being rebuilt, and an inquiry is underway into how security of supply should be organised and coordinated (*Nationell samordning av försörjningsberedskapen*).[129] Its conclusions are to be presented in May 2023. The report issued by the Swedish National Audit Office ties the definition of security of supply to the broader security of society, understood as "the ability in war and crises to: 1) provide the population with the supply and services needed for its existence, and 2) provide vital societal activities with the supply and services they need for their functioning".[130] Building on a study by the Swedish Defence Research Agency,[131] MSB defines security of supply as "the ability to provide the population in crisis and war situations with the goods and services it needs for its survival. It is also the ability to provide critical infrastructure, both civil and military, with the goods and services they need for their functionality".[132] MSB and the Swedish Defence Forces are currently working on strengthening both the civil and military security of supply needs.[133] Some agencies have received government assignments to map out production in their sectors to improve security of supply within them. For example, the Medical Products Agency (*Läkemedelsverket*) has been tasked with surveying the production of medicinal products.[134]

In **Norway**, the NATO membership provides the backbone for the country's crisis preparedness planning. At the same time, the Norwegian approach is very Nordic in that it emphasises the notion of total defence.

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125   Interview, 10 January 2022.

126   Interview, 21 January 2022.

127   Interview, 13 December 2021.

128   Interview, 10 January 2022.

129   Government Offices of Sweden 2021.

130   Riksrevisionen 2018.

131   Swedish Defence Research Agency 2022.

132   Swedish Civil Contingencies Agency 2021d.

133   Stenerus & Ingemarsdotter 2021.

134   Written comments, 7 March 2022.

The Norwegian formulation of the concept dates to the period after the Second World War, and it originally focused on strengthening Norwegian defence through ensuring strong civil emergency preparedness primarily in the face of an armed conflict. It has since evolved to reflect the changing geopolitical setting and security situation, brought about in particular by the end of the Cold War and the disintegration of the Soviet Union. While the threat of an armed attack against the country diminished, other vulnerabilities affecting Norwegian society became more discernible. The role of societal security in countering them became increasingly important.[135]

As such, in its present form, Norwegian total defence emphasises a broad approach to addressing society's vulnerabilities. It continues to rely on the cooperation between the armed forces and civil society – now perceived as a necessity to address crises that also occur during times of peace. Civil–military cooperation and total defence are also mentioned as one of the eight core areas of the government's work on public security.[136] According to this modernised total defence concept, resources available in wartime should also be available when responding to crises during peacetime.[137]

In addition to total defence, Norway uses the concept of public security, which is defined in the 2017 government white paper *Risk in a Safe and Secure Society* as the "society's ability to protect itself against, and manage, incidents that threaten fundamental values and functions and that put lives and health in danger".[138] While the authorities are said to "have a special responsibility to ensure the safety and security of the population",[139] the role of public resources and civil society are also emphasised in the white paper, in accordance with the whole-of-society approach. The private sector, non-governmental organisations, local communities and individuals need to contribute to public security through their material, economic and human resources.

Norway also uses the concept of security of supply, but it plays a less central role in the overall system than in Finland, for example. Security of supply is included among the 14 critical functions of society, and measures such as self-sufficiency and stockpiling have mostly been replaced by the business continuity management of critical enterprises.[140] The 2011 Act

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135   Ministry of Defence & Ministry of Justice and Public Security of Norway 2018.

136   Ministry of Justice and Public Security of Norway 2016, p. 3.

137   Ministry of Defence & Ministry of Justice and Public Security of Norway 2018.

138   Ministry of Justice and Public Security of Norway 2016, p. 8.

139   Ibid, p. 7.

140   Norwegian Directorate for Civil Protection 2017a.

on Business and Industry Preparedness gives the authorities a mandate to intervene in business enterprises if necessary.[141]

Denmark also applied the concept and system of total defence (*total-forsvar*) during the Cold War period. However, the system was dismantled in the 1990s when Denmark, similarly to Sweden, abandoned territorial defence, developed "an expeditionary model of its armed forces" and cut the number of military personnel.[142] The transformation has also been characterised as a process from a "territorial defence force to a deployable and sustainable force".[143] The terrorist attacks of 11 September 2001 also marked another significant watershed for the Danish crisis management system. To some degree, the Danish system is a product of the events of 9/11 and subsequent terrorist attacks[144] and up until 2014, the country's security policy was in fact primarily aimed at contributing to NATO- and US-led crisis management operations.[145] Total defence as a concept was reintroduced in a more limited form than during the Cold War in the Danish Defence Agreement 2018–2023.[146] The full-out war that broke out in Ukraine in February 2022 has raised discussion in Denmark on whether or not to build back some of these structures of preparedness.[147] Moreover, Denmark's role as an important NATO Host Nation Support hub has led to a renewed debate about the total defence concept, which is likely to leave a clear mark on the upcoming political defence agreement negotiations.[148]

Although the total defence concept is not as explicitly elaborated in Denmark as it is in Sweden and Norway, the Danish model represents a holistic approach to preparedness. One interviewee reflected upon some pragmatic initiatives closely linked to the idea total defence that might also be considered in the Danish context, such as advising people how to prepare themselves to be without food, water and electricity for a limited timeframe.[149]

As part of the broader discussions on civil preparedness, the importance of security of supply is also growing in Denmark. This is reflected, for instance, in the government's new strategy for foreign and security policies – *Udenrigs- og Sikkerhedspolitisk Strategi 2022* – which states

141 Ministry of Trade, Industry and Fisheries of Norway 2011.

142 Ibid.

143 Jakobsen & Rynning 2019, p. 893.

144 Written comments, 7 June 2022.

145 Szymański 2018.

146 Government of Denmark 2020.

147 Interview, 9 December 2021; written comments, 23 March 2022.

148 Written comments, 4 July 2022.

149 Interview, 8 December 2021.

that together with the EU, Denmark will strengthen its resilience and se-curity of supply in this time of economic and geopolitical shifts and rising global competition for the world's scarce resources and raw materials.[150] Our interviewees associated security of supply with three separate, yet overlapping themes: (1) emergency management, be it man-made or nat-ural disasters; (2) material preparedness and stockpiling; and (3) critical infrastructure protection, including investment screening.

As a result of the Covid-19 crisis, the term of security of supply has become ever more relevant, one example of which has been the founding of the new Danish Critical Supply Agency (*Styrelsen for Forsyningssik-kerhed*, SFOS) under the Ministry of Justice.[151] SFOS was launched amidst the pandemic crisis with the main task of supporting "the Danish society in preventing and handling present and future crises of critical supply."[152] While the key functions of the agency have initially been directly related to pandemic management and have involved the creation of a national stockpile of personal protective equipment, for example, building con-nections with relevant stakeholders (internationally, with the EU and with the private sector) is also part of the work.[153] Moreover, the agen-cy is expected to organise its work to support society's preparedness "in connection with future crises, where scarcity of particularly critical resources can be foreseen."[154] It does not have a formal mandate yet, meaning that any cross-cutting activities must be based on negotiations with the responsible sectors.[155]

A broad range of authorities and organisations are engaged in pre-paredness and the management of crises and emergencies.[156] The Danish crisis management system is based on the precondition that all central government, regional and local authorities are responsible for familiar-ising themselves with and preparing themselves for their respective roles and responsibilities.[157] It relies on the expertise of specialised agencies, especially that of the Danish Emergency Management Agency (DEMA) operating under the Ministry of Defence. Although the concept of societal security is not an often-used concept in Denmark, the interviews and

150   Ministry for Foreign Affairs of Denmark (n.d.a), p. 29.

151   Ministry of Justice of Denmark 2021.

152   Danish Critical Supply Agency (n.d).

153   Ministry of Justice of Denmark 2021.

154   Ibid.

155   Written comments, 4 July 2022.

156   Danish Emergency Management Agency 2017.

157   See Danish Emergency Management Agency 2021.

the written documents did reflect a broad approach to security, which is shared by all the Nordics.

It should also be noted that in Denmark, the notions of preparedness and security of supply are used in different contexts and for different functions. The guiding documents and legislation use the term **emergency preparedness** (*beredskab*). For instance, the Danish Defence Agreement (see below) discusses "emergency preparedness", and the law regulating preparedness is called the Emergency Preparedness Act.[158] With regard to the terms of civil and crisis preparedness, the interviewees were more familiar with the latter, noting, however, that there was no real difference between the two.

In Denmark, the political parties in the parliament have entered into a multi-annual Defence Agreement for 2018–2023, which states that "a robust Danish defence and preparedness is the prerequisite for a safe society".[159] The agreement also covers national rescue preparedness and the work of DEMA, which indicates that crisis preparedness is aligned with the overall political framework of defence and security policy. In fact, strengthening national preparedness is one of the key themes in the current five-year agreement.[160] The Covid-19 pandemic is also one reason why the resilience of society is discussed more than before. Some interviewees noted that there is a lack of academic research on resilience and societal security in the Danish context, and more analysis on these topics may be needed[161].

The **Faroe Islands**, while part of Denmark, are a self-governing area made up of 18 islands in the North Atlantic. Following the passage of the Home Rule Act after the Second World War, the Faroe Islands have received more responsibilities in recent decades: among them are emergency preparedness, social security, protection of the environment, financial policy and external trade relations.[162] The Faroe Islands largely build on the Danish preparedness system: there is a preparedness agreement between the two[163], and Denmark has a legal obligation to assist the Faroe Islands[164] in specific areas covered by special agreements (nuclear and chemical incidents and search and rescue).[165] In 2007, the Faroe Islands took over

158   Ministry of Defence of Denmark 2017.

159   Government of Denmark 2020.

160   Ibid.

161   Interview, 8 December 2021.

162   Government of the Faroe Islands (n.d.b).

163   Ministry of Defence of Denmark 2010, p. 2.

164   Interviews, 31 January 2022 and 10 January 2022.

165   Written comments, 4 July 2022.

civil preparedness functions from Denmark,[166] which was in line with the general trend of the Faroe Islands taking on more responsibilities outlined in the constitution. The Faroe Islands have a small Danish military liaison office, and the Joint Arctic Command[167] normally has a Thetis-class patrol vessel in Faroese waters, which performs fishery inspections, search and rescue missions and hydrographic surveys, and offers support to civil society.

Greenland, too, is part of the Danish Realm. It has autonomy over education, health, fisheries, environment and climate, but matters belonging to foreign, defence and security policy are jointly managed within the Kingdom of Denmark. The Self-Government Act of 2008[168] provides Greenland with possibilities for increased autonomy. Because of its location and geography, Greenland imports nearly all its products, most of which come from Denmark.[169] While foreign, defence and security policy and thereby the military aspects remain the responsibility of Denmark, Greenland's own focus is more on the civilian aspects such as crises. The Joint Arctic Command contributes to Greenlandic society with search and rescue services and maritime pollution prevention, among other tasks.[170] Neither Greenland nor the Faroe Islands publish specific risk registers.[171]

In **Iceland**, the concept of civil preparedness is often used interchangeably with that of crisis preparedness. One of the reasons is that in Icelandic, the corresponding words are almost the same.[172] Civil preparedness is closely interlinked with the concept of civil protection, which is the name of the legal act that stipulates the roles and responsibilities in cases of emergency. The four guiding principles for civil protection coordination are responsibility, proximity, similarity and cooperation.[173] Since civil preparedness and protection are cross-sectoral tasks that involve several actors, it is important to apply the four guiding principles of civil protection to ensure continuity, uniformity and cooperation in all aspects.

Iceland does not have armed forces. Its defence relies on NATO and bilateral agreements with NATO allies, such as its agreement with the United States in force since 1951.[174]. In the strict sense, Iceland lacks the idea of

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166   Ministry of Defence of Denmark 2010, p. 25.

167   Danish Defence 2021.

168   It replaced the Home Rule Act enacted in 1979.

169   Interview, 4 February 2022.

170   Danish Defence 2021.

171   Written comments, 4 July 2022.

172   Interview, 1 February 2022.

173   Written comments, 3 May 2022.

174   Ómarsdóttir 2021, p. 13; Government of Iceland (n.d)

total defence as it entails civil–military cooperation, and the domestic military component is simply absent. However, in a broader sense, this is exactly Iceland's main contribution to its international cooperation, and that within NATO in particular: to offer civilian capabilities. According to the Government of Iceland, the membership in NATO and the bilateral agreement with the US form the two main pillars of the country's security policy. Since the closing of the permanent military base by the US in 2006, Iceland has concluded bilateral cooperation agreements with Canada, Denmark, Norway and the United Kingdom.[175] These aim at facilitating dialogue on security and defence issues, improving situational awareness, as well as aiding Iceland with search and rescue tasks.

As in the other Nordics, Icelandic preparedness is based on both the whole-of-society and the whole-of-government approaches. Jointly, the two approaches are seen to form the basis of societal resilience. Security of supply has recently been operationalised under the umbrella of resilience. During the interviews, two recent events were particularly important for the development and understanding of security of supply: extreme weather in 2019 and the Covid-19 pandemic. With the ongoing pandemic, the term security of supply has gained more substance and importance; key concerns have evolved around hospital capacity and the fear of not having enough workforce in medical facilities, for example[176]. Further-more, during the pandemic, the security of supply concerns have touched upon food and pharmaceuticals, in which Iceland is heavily dependent on imports. In general, the security of supply challenges and concerns cor-respond well to those mentioned in the interviews with other Nordics.[177]

Similarly to Iceland, the self-governing regions lack the military com-ponent of preparedness. Åland is demilitarised under international law and therefore has no permanent military presence.[178] Since there is no large military presence in the Faroe Islands, interviewees noted the irrele-vance of distinguishing between "civilian" and "military" preparedness.[179] This is partly related to Denmark's role: while the Faroe Islands do have some rights stipulated in the Foreign Policy Act to "negotiate and conclude agreements under international law […], which relate entirely to subject matters under the jurisdiction of the Authorities of the Faroes", foreign, defence and security policy are the responsibilities of Denmark. The same

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175   See, for example, Foreign & Commonwealth Office 2019.

176   Interviews, 1 February 2022 and 17 February 2022.

177   This has also been noted in previous studies such as Aula et al. 2020.

178   Ministry for Foreign Affairs of Finland (n.d.b).

179   Interview, 4 February 2022.

applies even to a greater extent to Greenland, which has both US[180] and Danish military presence. Greenland's own focus is on the civilian side of preparedness, even though the Danish military also participates in emergency intensive care flights, for example.[181] Even if none of the islands have their own military responsibilities, it does by no means mean that international hard security is not an important issue.

To sum up, the Nordics largely build their existing preparedness systems on a whole-of-society approach in which responsibilities for security have been diversified and devolved to market- and society-based actors. In all the Nordics, the broad security concepts underpin the view that modern preparedness – comprising both military and civilian pillars – requires various societal actors, ranging from governmental to business and civil society organisations, to build resilience capacities, support the state in maintaining preparedness and ensure the continuity of vital societal functions. It includes the idea of increasing public–private partnerships, since private actors often own full or partial stakes in critical infrastructure or functions such as energy, data cables, railways, banking and finance, health services and food supply. The Nordic whole-of-society approach is thus an inclusive model of cooperation that aims to bring all relevant actors together in a comprehensive system of joint preparedness.

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180   The US is present in Greenland through its Thule Air Base, established in 1950.

181   Interview, 10 January 2022.

3 ACTORS AND RESPONSIBILITIES

INTRODUCTION

A main challenge for Nordic preparedness cooperation is related to the fact that the organisation of preparedness work varies a lot in the Nordics. Not only are the coordinating authorities and ministries different, but so are the responsibilities of each national agency and the legislation and principles guiding or mandating the work. The different terminology used in each country to refer to different aspects of preparedness also complicates cooperation between the Nordics because it may be challenging to understand each other's structures or find one's counterparts. If Nordic cooperation is to be strengthened, the preparedness structures need to be clearly mapped out in each case in a comparative manner.

Different experiences and strategic cultures contribute to the divergences. While largely drawing on similar threat perceptions, the Nordics have responded to changes in the operational environment in different ways. Sweden has made the most radical shifts in its system, having had a large total defence structure during the Cold War, including stockpiling.[182] Finland is at the other end of the spectrum, having kept intact most of its structures from the Cold War. These experiences still shape the civil preparedness structures in each country, as do more recent national experiences. These include the terror attack in Utøya, Norway, in 2011 and the 2010 ash cloud stemming from the Icelandic volcano Eyjafjallajökull, causing disruptions to air traffic globally. Some Swedish regions witnessed major forest fires in 2014 and 2018 when Sweden also activated

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182   See Anderson & Jeppson 2018; Johansson et al. 2017; Government of Sweden 2017.

the Emergency Response Coordination Centre (ERCC) and received assistance from a number of countries, including Denmark through the EU Civil Protection Mechanism (EUCPM) and bilaterally from Norway and Finland.[183] While Denmark lacks recent experience of major national disasters[184] caused by natural hazards, it has experienced severe flooding in 2016 and other disruptions such as planned and realised terrorist attacks (most severe in 2015) and a train accident on the bridge between Sjælland and Fyn in 2019. The latter took place amidst extreme weather conditions, which left 100,000 people without electricity in Sweden.[185]

The self-governing regions have also faced several natural hazards. Greenland experienced a tsunami and landslide in Karratfjord in 2017, whereas the Faroe Islands have grappled with heavy storms and other difficult weather phenomena.[186] The Åland Islands, too, had to deal with the Alfrida storm, measuring the highest wind speeds in Finland so far.[187] Some of these experiences were shared, and assistance from other Nordic countries has been perceived as valuable.

However, the Covid-19 pandemic not only challenged the structures in all the Nordic countries but also impacted all of them at the same time. The pandemic proved particularly challenging for the Nordics because it called into question some of the key principles guiding preparedness work both within the Nordic countries and between them. Most notably, perhaps, it was the principle of free movement of people that was put to an unprecedented test due to the travel restrictions, causing significant distress for many people especially in border regions.[188] Given the challenges, the pandemic has raised questions about whether the very organisation of preparedness work should be updated. In some instances, it has also led to new measures, which include the new agency rapidly launched in Denmark in August 2020.

NORDIC WHOLE-OF-GOVERNMENT APPROACH

As elaborated in the previous chapter, the Nordic concepts that guide the understanding of preparedness and related work combine the military and civilian aspects of crisis planning and preparedness. Herein, the idea

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183   Emergency Response Coordination Centre 2018.

184   See, for example, Danish Emergency Management Agency 2019.

185   Helin & Kokkonen 2019.

186   Nordforsk 2021b.

187   Ilmastokatsaus 2019.

188   Creutz et al. 2021.

of total defence forms a shared basis for all the Nordic countries. It usually encompasses a variety of actors and highlights societal resilience in times of normalcy as well. Total defence thus reflects the mutual civil–military role of preparedness activities. As an idea, and especially in light of the current security environment encompassing a broad set of threats, total defence is more topical than ever. In comparison to the military side of total defence, the civilian aspect is, however, characterised by a much larger number of actors.

Based on the total defence thinking, all the Nordics apply a whole-of-government approach to preparedness. This means that ministries, government agencies and other stakeholders work together horizontally. The principal responsibility generally lies with the central government, which makes decisions, which are then implemented by the authorities. Yet, at the practical level, most of the Nordic countries' systems are characterised by a sectoral approach when it comes to the division of labour and responsibilities. The entity responsible in a crisis depends on which ministry or department is responsible for the specific crisis or issue in question.

In **Finland**, the whole-of-government approach means that each governmental branch must develop crisis preparedness and security of supply in their respective sectors. As stated in the 2017 Finnish security strategy, during disruptions, "only minimum changes are made to the lines of authority, organisation and the division of responsibilities, [and] the operations are led by responsible and competent authorities or other security actors that are obliged to do so by law."[189]

Similarly, in **Norway**, all ministries are required to maintain and develop work on civil protection and emergency preparedness in their own sector. All ministers have constitutional responsibility over their own area, which they also retain during a crisis. However, 14 mainly cross-sectoral critical societal functions have been defined, with each function assigned to a ministry responsible for coordination. The Ministry of Justice and Public Security is responsible for coordinating civil protection and preparedness work across sectors and the critical functions. Its responsibilities include preparing strategies and planning, clarifying responsibilities between ministries and assisting them in solving problems, maintaining an overview of the critical societal functions, guiding ministries in civil preparedness in their own sectors and contributing to international cooperation on the topic. In addition, the Ministry of Justice and Public Security cooperates with other ministries in tasks such as

189   Government of Finland 2017.

maintaining and developing the Civil Emergency Planning System (SBS), carrying out national exercises and facilitating information exchange.[190]

In **Denmark**, too, ministers are fully responsible for everything under the ministry's domain (*ministeransvar*).[191] The responsibilities are sectoral both in times of normalcy and crisis. According to Chapter 5 of the Danish Emergency Management Act, all authorities are required to plan for the continuity and maintenance of vital societal functions within their sectors in case of major accidents and disasters. This includes the development of preparedness plans. Authorities must therefore prepare for conducting crisis management within their own sector, assisting other authorities during major accidents and disasters that involve several sectors and participating in cross-sectoral crisis management forums.[192]

The **Icelandic** preparedness system and the guiding legislation resemble those of Denmark and Norway, thanks to close collaboration between the countries.[193] The government, ministries and competent authorities are responsible for preparedness related to incident management and running of operations. These functions are managed based on a normal mandate, by which each ministry coordinates the protection of critical functions in its own field of responsibility. In short, the division of responsibilities is sectoral. The responsibilities for contingency plans are stated in law, and in case it is not clear who is responsible, it is up to the National Commissioner of the Icelandic Police to prepare a contingency plan.[194] The Ministry of Justice has the main responsibility for civil protection at the administrative level, while the Department of Civil Protection and Emergency Management under the National Commissioner of the Icelandic Police is the executive authority at the operational level of civil protection.[195] In times of crisis, the civil protection authorities are responsible for operational decisions, and ministries cannot overrule them. The National Commissioner of the Icelandic Police makes the decisions on whether to activate civil protection alerts (and of which level) and then informs the Minister of Justice of these decisions.[196]

Sweden illustrates a slightly different whole-of-government approach. Although ministries are responsible for coordinating with the authorities within their own sectors, there is a so-called ministerial rule, which

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190   Ministry of Justice and Public Security of Norway 2017.

191   Ministry of Justice of Denmark (n.d.).

192   Retsinformation.dk website (n.d.).

193   Interviews, 17 February 2022 and 3 March 2022.

194   Interview, 17 February 2022

195   Written comments, 3 May 2022.

196   Almannavarnir (n.d.).

forbids Swedish decision-making bodies from intervening "in an agency's decisions in specific matters relating to the application of the law or the due exercise of its authority."[197] While the government is responsible for national crisis management, this mostly applies to strategic decision-making and planning. The government may only issue recommendations based on its collective decision-making, but the practical work of how to implement those recommendations and the law is up to the various authorities in Sweden, which the parliament formally oversees. The Covid-19 pandemic illustrated Sweden's different approach in that in the other Nordics, the press briefings were held by the government and responsible ministers, while in Sweden, they were held by the main authorities involved and top civil servants.

The Nordic whole-of-government approaches have not gone without criticism. For example, due to the strong responsibility of sectoral authorities vis-à-vis ministers in Sweden, some interviewees questioned whether the Swedish system can really be considered whole-of-government. In Finland, too, a 2016 study on the national security of supply organisation suggested that especially information sharing is still considered to be too vertical and siloed, while the current security environment requires a more horizontal approach.[198] Another study conducted in the context of the Covid-19 pandemic also identified other development needs in the Finnish comprehensive security system. These included too few resources especially at the level of the Prime Minister's Office, dependence on few critical persons, de facto inability to work horizontally and outside silos, resource competition between governmental agencies, a general lack of trust between actors and, in some cases, unclear administrative responsibilities.[199] In Denmark, too, the Covid-19 crisis exhibited the limitations of its crisis management system firmly rooted in the sector responsibility principle.[200]

What may partly mitigate the sectoral approaches and improve the whole-of-government approach are the overarching bodies that tie together representatives from various stakeholders in preparedness work. In **Norway**, the main body for discussing overall security issues is the Governmental Security Council, while actions are coordinated at the ministerial level by the Crisis Council.[201] The government has also recently set up a total preparedness commission, which works in parallel with

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197 Government of Sweden 2015.

198 Aaltola et al. 2016.

199 Mörttinen 2021.

200 Written comments, 4 July 2022.

201 Ministry of Justice and Public Security of Norway 2017.

the previously established total defence commission to plan and develop civil preparedness planning in Norway.[202] The aim of the commission is to evaluate the strengths and weaknesses of the Norwegian system and to give concrete recommendations for its development. The idea is to provide a basis for the long-term planning of this field, meaning that the commission is not set to become a permanent tool itself.[203]

The **Swedish** equivalents are the Crisis Management Coordination Secretariat, which monitors developments, and the Crisis Management Council, which meets up for information sharing and discussion both in times of normalcy and during incidents and crises.[204] It is headed by the State Secretary to the Prime Minister and includes representatives of the relevant ministries, eight authorities[205] and a County Governor representing the County Administrative Boards.

In **Finland**, the Security Committee, which is a permanent and broad-based cooperation body for contingency planning, assists the Finnish Government and ministries in comprehensive security matters.[206] The committee comprises 20 members and four experts from different branches of government, various official bodies and a number of business organisations. More recently, the Ministry of Economic Affairs and Employment has initiated a cooperation group on security of supply.[207]

In a similar fashion to the other Nordics, **Denmark** also has a government crisis management group, which is composed of the heads of department of various ministries and agencies, and functions as a "forum for preparedness planning among Danish authorities" but is not activated during acute crises.[208] When it comes to nation-wide crises, the management is carried out by a committee of ministers led by the Prime Minister, but this does not change the sectoral responsibilities in line with the ministers' domains (*ministeransvar*), which are described in the constitution. Underneath the ministers, a committee led by permanent secretaries deal with issues related to the security of society such as the security services. This committee is also responsible for coordination in the event of terrorist attacks or other major security events. The second layer is the National Operative Staff (*Den Nationale Operative Stab*, NOST)

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202 Interviews, 14 January 2022 and 21 January 2022.

203 Government of Norway 2022.

204 Government of Sweden 2022c.

205 These include the National Police Commissioner, the Head of the Swedish Security Service, the Supreme Commander of the Armed Forces, the Directors-General of the Swedish national grid, the Swedish Civil Contingencies Agency, the Swedish Post and Telecom Authority, the National Board of Health and Welfare and the Swedish Radiation Safety Authority.

206 The Security Committee 2021.

207 Ministry of Economic Affairs and Employment of Finland 2021.

208 Danish Emergency Management Agency 2021, p. 6.

and the International Operational Staff (*Internationale Operative Stab*, IOS), of which the former is the main crisis management body in domestic situations.[209] NOST contributes to crisis management by functioning as the physical and organisational framework for the operational cooperation and coordination among state authorities in handling all types of major crises, accidents and disasters. Each authority represented in NOST participates with its own competence, in accordance with the principle of sectoral responsibility.[210] During the Covid-19 pandemic, NOST was expanded (NOST+)[211] and transformed from a coordinating body to an operational one.[212]

In **Iceland**, the permanent secretaries of all ministries form a committee during and after crises to discuss and share information on relevant response measures. Although the cabinet is not collectively responsible for government decisions, ministries cooperate closely and extensively when crises occur. Before the regular meetings of the government a committee of ministers prepares and discusses cross-cutting issues, and experts and other relevant actors may be consulted on their field of expertise in these meetings. Response operations are led by the responsible and competent authorities and coordinated centrally, and other actors are obliged by law to participate in the coordination.[213]

The relationship between the self-governing regions and the mainland states is also evident in the organisation of preparedness, making the regions' systems mainly sectoral as well. The **Faroe Islands** largely build on the Danish preparedness system. In 2007, the Faroe Islands took over civil preparedness functions from Denmark.[214] There is a preparedness agreement between the two[215], and Denmark has a legal obligation to assist the Faroe Islands.[216] The Faroese system is also sectoral, which was formalised by the Emergency Management Act adopted in 2012.[217]

In **Greenland**, too, preparedness responsibilities have been divided sectorally since 2010[218] following the introduction of the Emergency

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209   The permanent members of NOST are the Danish National Police (chair), the Danish Emergency Management Agency (DEMA), the Danish Health Authority, the Defence Command, the Police Intelligence Service (PET), the Defence Intelligence Service (DDIS), the Ministry of Foreign Affairs, the Danish Transport, Construction and Housing Authority, and the Danish Critical Supply Agency (SFOS).

210   Danish Emergency Management Agency 2019, p. 10.

211   Parliament of Denmark 2021, p. 179.

212   Written comments, 4 July 2022.

213   Written comments, 3 May 2022.

214   Department of Defence of Denmark 2010, p. 25.

215   Ibid., p. 2.

216   Interviews, 31 January 2022 and 10 January 2022.

217   Dahlberg 2022b, p. 7.

218   Interview, 4 February 2022. See also Government of Greenland 2013.

Management Act, after which the preparedness system has been increasingly professionalised.[219] Each of the five municipalities have responsibilities related to rescue services and risk analysis.[220] Some emergency preparedness responsibilities are divided between Greenland and Denmark. For example, during the 2017 natural disaster, the Joint Arctic Command under the Danish Defence participated in responding to the crisis. The competence in the field of the marine environment is also divided between both parties. On the Greenlandic side, the maritime area within three nautical miles from the shore is under the responsibility of the Government of Greenland, while on the Danish side, the Danish Ministry of Defence is in charge. There is an agreement in place that stipulates that the Greenlandic government may request the Danish Defence to take over if needed.[221] The Danish Ministry of Defence has also established a so-called Arctic Response Force (ARF) or Arctic Preparedness Force (*Arktisk Beredskabsstyrke*), which "consists of a detailed contingency plan assets from the Defence Command and DEMA" and can offer support in major incidents.[222] It is, however, not a standing force. Though the Faroe Islands are included in its area of operations, the Arctic Response Force has mainly been focused on Greenland.

Greenland has also considered and applied some aspects of Denmark's civil protection, but the very different character of Greenland makes such efforts limited.[223] At the strategic level, Greenland has a preparedness commission (*Beredskabskommission*) or Emergency Services Commission for significant crises or emergencies, or situations in which coordination is required, and it resembles the Danish NOST.[224] The Emergency Management Staff functions at the operational level and includes representatives from all sectors.[225]

The Finnish laws on preparedness[226] and rescue[227] to improve safety and prevent accidents apply equally to mainland Finland and **Åland**. From this, it follows that the definition of civil preparedness mainly bears the same meaning in Åland and mainland Finland. As stated by our interviewees, it can be understood as preparing in advance for catastrophes

219 Dahlberg 2022b.

220 Parliament of Greenland 2010.

221 Written comments, 4 July 2022.

222 Dahlberg 2022b, p. 2.; see also Dahlberg 2022a, p. 10–12.

223 Interview, 4 February 2022.

224 Dahlberg 2022b.

225 Dahlberg 2022.

226 Ministry of Justice of Finland 2011.

227 Ministry of the Interior of Finland 2011.

and exceptional circumstances.[228] There are also apparent similarities in the terminology used, for the interviewees noted that they use the same terms and definitions as the National Emergency Supply Agency (NESA). Moreover, following the same legal frameworks, the responsibilities of authorities and municipalities are similar in mainland Finland and Åland when it comes to preparing for exceptional situations and ensuring the continuity of activities under such circumstances.[229] Many preparedness functions are carried out in cooperation between the State Department of Åland (part of the Finnish central government) and the Government of Åland. These include functions related to civil protection, as well as responsibilities in security of supply that fall under the competence of the NESA, such as mandatory storage of medicinal products and fuel stock-piling.[230] Åland also has preparedness groups that have a coordinating function, oversee the preparedness work within their sector and suggest changes. As such, these groups' operations largely follow the same logic as the pooling system coordinated by the NESA in mainland Finland.[231] The groups assume an operative role only in exceptional situations. The preparedness groups include five sectors, each with several actors.[232]

One aspect that should be noted is the fact that many people involved in preparedness work in the Faroe Islands, Greenland and Åland wear several hats, which enables a comprehensive overview and understanding of the work and may also decrease the administrative silos recognised in the larger mainland Nordics. On the other hand, their populations are small, and all the three areas therefore face challenges especially in terms of securing sufficient human resources to cover all the portfolios and tasks. Unlike in the larger Nordics, one person may need to cover a much broader range of topics, and expertise in some specific fields may be derived from elsewhere.

The Haga cooperation was mentioned as an important framework in many of the interviews with Nordic experts. Currently, the Faroe Islands, Greenland and Åland are not part of it. While the Haga cooperation has in recent years focused on strengthening cooperation related to combatting forest fires and wildfires, responding to chemical, biological, radiological and nuclear (CBRN) threats, and improving emergency communication, it also looks ahead to other areas. These include hybrid threats, civil-military cooperation and the importance of the Nordic/Arctic region in

228 Interview, 17 February 2022.

229 Written comments, 17 February 2022.

230 Government of Åland 2000.

231 Written comments, 17 February 2022.

232 The sectors are technical infrastructure in society, transportation, storage and distribution, energy supply, food supply, and social and health care.

terms of climate change and geopolitical dynamics.[233] Considering that the first set of threats is closely linked to recent incidents experienced the self-governing regions, and that the last set of issues mostly involves transnational threats that also affect them, the inclusion of Greenland, the Faroe Islands and Åland in the Haga cooperation could concretely strengthen the whole-of-government approach between the mainland states and self-governing regions, as well as coordination during a possible incident.

NATIONAL AGENCIES

The organisational structures and agencies related to national preparedness vary significantly between the Nordics, as do the definitions of the activities actually carried out by the agencies. With the exception of Iceland and the self-governing regions, all the Nordic countries have a specific agency that deals with preparedness issues (See Table 1). What makes a Nordic comparison difficult is that the definitions of the functions that these national agencies are responsible for vary between crisis preparedness, civil defence, civil preparedness, civil protection and crisis management, and even the English translations of the terms may carry different meanings in the different countries. What unites all of them is the overarching goal of ensuring societal preparedness in a broad sense to maintain the continuity of societal functions in crisis situations.

233   Swedish Civil Contingencies Agency 2020.

Table 1: National authorities and agencies involved in civil preparedness.

Country/region	Agency	Task
Denmark	Danish Emergency Management Agency (DEMA; Beredskabsstyrelsen)	"Works to prepare society for, prevent and respond to crises, accidents and disasters."[i]
	Danish Critical Supply Agency (SFOS; Styrelsen for Forsyningssikkerhed)	"Supports the Danish society in preventing and handling present and future crises of critical supply."[ii]
Faroe Islands	No specific agency. The Ministry of Fisheries is responsible for the national emergency preparedness and search and rescue.	Responsible for issues concerning civil protection, public safety and emergency management where no other authority has responsibility for them.[iii]
	The Ministry of Environment, Industry and Trade is responsible for securing food and energy supplies.	Responsible for the necessary supply of basic commodities for the public. Food, water, and energy supply.[iv]
Greenland	No specific agency. The Ministry for Agriculture, Self-Sufficiency, Energy and Environment is responsible for contingency management.	The department concerns itself with the safety of citizens and measures related to accidents and disasters, such as environmental emergency preparedness and contingency management.[v]
Finland	National Emergency Supply Agency (NESA; Huoltovarmuuskeskus)	"Carrying out planning and operations related to the maintenance and development of Finland's security of supply."[vi]
Åland	No specific agency. The Government of Åland and State Department of Åland are the main actors that jointly manage civil protection and preparedness.	"Matters concerning population protection and preparedness for exceptional circumstances fall under the responsibility of the state, while the fire and rescue service and health services, for example, fall under the region's responsibility."[vii]
Iceland	No specific national agency. The Department of Civil Protection and Emergency Management under the National Commissioner of the Icelandic Police (NCIP) is responsible for civil protection matters.	"Responsible for daily administration of Civil Protection matters, maintains a national co-ordination/command centre and is also responsible for operating the centre in emergency situations."
Norway	Norwegian Directorate for Civil Protection (DSB; Direktoratet for samfunnssikkerhet og beredskap)	"Maintaining a complete overview of various risks and vulnerability in general. Responsibilities cover local, regional and national preparedness and emergency planning, fire safety, electrical safety, handling and transport of hazardous substances, as well as product and consumer safety."[viii]
Sweden	Swedish Civil Contingencies Agency (MSB; Myndigheten för samhällsskydd och beredskap)	"Responsible for reinforcing and overall coordination of issues concerning civil protection, public safety, emergency management and civil defence. Also responsible for sectors that *no other authority has* [...] before, during and after an emergency or crisis. After 1 October 2022, MSB will among other tasks be responsible for coherent total defence planning together with the Armed Forces; function as one of the sector authorities for civil protection and protection of the civilian population; support coordinated management of societal disruptions (accident, crisis, war)."[ix]
	47 designated authorities responsible for monitoring until 1 October 2022 (21 county administrative boards and 26 other authorities).	Responsible for coordinating issues concerning civil defence within their sectors (areas of responsibility).
	After 1 October 2022: 60 designated preparedness authorities (21 county administrative boards and 39 other preparedness authorities).	"With their activities reduce vulnerability in society and develop a good ability to handle their tasks in peacetime crisis situations and heightened preparedness."[x]

i   Danish Emergency Management Agency n.d.
ii   Danish Critical Supply Agency n.d.
iii   Written comments, 29 April 2022.
iv   Ibid.
v   Alaska Federation of Natives 2018.
vi   National Emergency Supply Agency n.d.

vi   National Emergency Supply Agency n.d.a.
vii   State Department of Åland n.d.
viii   Norwegian Directorate for Civil Protection n.d.
ix   Swedish Civil Contingencies Agency n.d.e.
x   Government of Sweden 2022a.

In **Iceland**, civil protection falls under the umbrella of the Ministry of Justice, and operationally the responsibility is with the police. In terms of national administration, civil protection responsibilities have been delegated to the National Commissioner of the Icelandic Police (NCIP) and specifically the Department of Civil Protection and Emergency Management.

The **Norwegian** Directorate for Civil Protection (DSB) reports to the Ministry of Justice and Public Security and supports the ministry in its coordinating role. Its main task is to maintain a general overview of risks and vulnerabilities within society. This includes preparing annual Analyses of Crisis Scenarios (ACS), which DSB has produced since 2011 to map out major disasters that could affect Norwegian society. In addition, DSB is tasked with local, regional and national preparedness and emergency planning, fire safety, electrical safety, handling and transport of hazardous substances, as well as product and consumer safety. DSB also manages the Norwegian Emergency Public Safety Network (*Nødnett*), and oversees the Norwegian Civil Defence, the DSB College, the Norwegian Fire Academy and the Civil Defence Academy.[234]

In comparing **Swedish** preparedness with the other Nordic countries, a challenge can be observed in the Swedish system, which stems from the fact that it is highly decentralised and characterised by a pluralistic authority landscape,[235] in which the work of individual authorities is guided by various laws.[236] Many of the actors and agencies involved appear to carry out their activities based on their own, and sometimes contradictory, understandings of the guiding concepts and principles. This was also reflected in the interviews, in which most respondents stressed that the definitions depend on who you ask. Nevertheless, a common notion clearly shared by most interviewed stakeholders was the whole-of-society approach, whereby preparedness was considered to range from the individual level to the authorities and all the way up to the government.

At the agency level, the Swedish Civil Contingencies Agency (MSB) is somewhat of an exception. Although MSB functions at the national level, its tasks are currently mainly related to coordination between various actors, and it has responsibility for "issues concerning civil protection, public safety, emergency management and civil defence *as long as no other authority has responsibility* [emphasis added]".[237] As noted on MSB's website, its responsibility covers measures taken before, during and after an emergency or crisis. In contrast, crisis preparedness consists of a combination of the daily activities of several actors. The 21 County

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234 Norwegian Directorate for Civil Protection (n.d.).

235 Interview, 3 December 2021.

236 Written comments, 3 June 2022. See also Parliament of Sweden 2007 and Parliament of Sweden 2017.

237 Ministry of Justice of Sweden 2008.

Administrative Boards (*länsstyrelse*) are authorities that function as an extension of the state for municipalities, coordinate regional preparedness work and conduct risk and vulnerability assessments, among other tasks.[238] The 21 Swedish regions[239] have crisis preparedness and civil defence responsibilities, including the performance of risk and vulnerability assessments within certain sectors such as healthcare and public transport.[240]

Most crisis management issues are dealt with by individual authorities in certain sectors. Currently –until 1 October 2022 – Sweden has so-called authorities responsible for monitoring (*bevakningsansvariga myndigheter*). Their more specific tasks include the development of plans and preparedness for societal disruptions with the help of, for example, threat and vulnerability assessments, personnel training and the procurement of supplies and equipment needed in heightened preparedness. Besides the 21 County Administrative Boards, the authorities responsible for monitoring include altogether 26 agencies.[241]

After the structural reform that will enter into force on 1 October 2022, the authorities responsible for monitoring will be replaced by 60 preparedness authorities *(beredskapsmyndigheter)* consisting of 21 County Administrative Boards and 39 other central authorities with specific responsibilities for crisis preparedness and total defence. The 21 County Administrative Boards are to be divided into six geographical areas with two to seven boards in each area. In addition to the above-mentioned responsibilities, their tasks will include coordination with the Armed Forces to support military defence, the performance of necessary analyses, development efforts and the procurement of supplies required during heightened preparedness. They will also be responsible for enabling transitioning to wartime organisation and faster measures during heightened preparedness if decided by the government.[242] Ten out of these 60 authorities will be part of the ten crisis preparedness sectors, and each of these ten authorities will have a sector responsibility. They will exercise their responsibility by developing crisis preparedness within the sector, supporting the national crisis preparedness agencies and ensuring coordination with other relevant actors. MSB and the Armed Forces will jointly support the actors of this new crisis preparedness system and ensure common defence planning.[243]

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238 See, for example, Länsstyrelsen.se (n.d.).

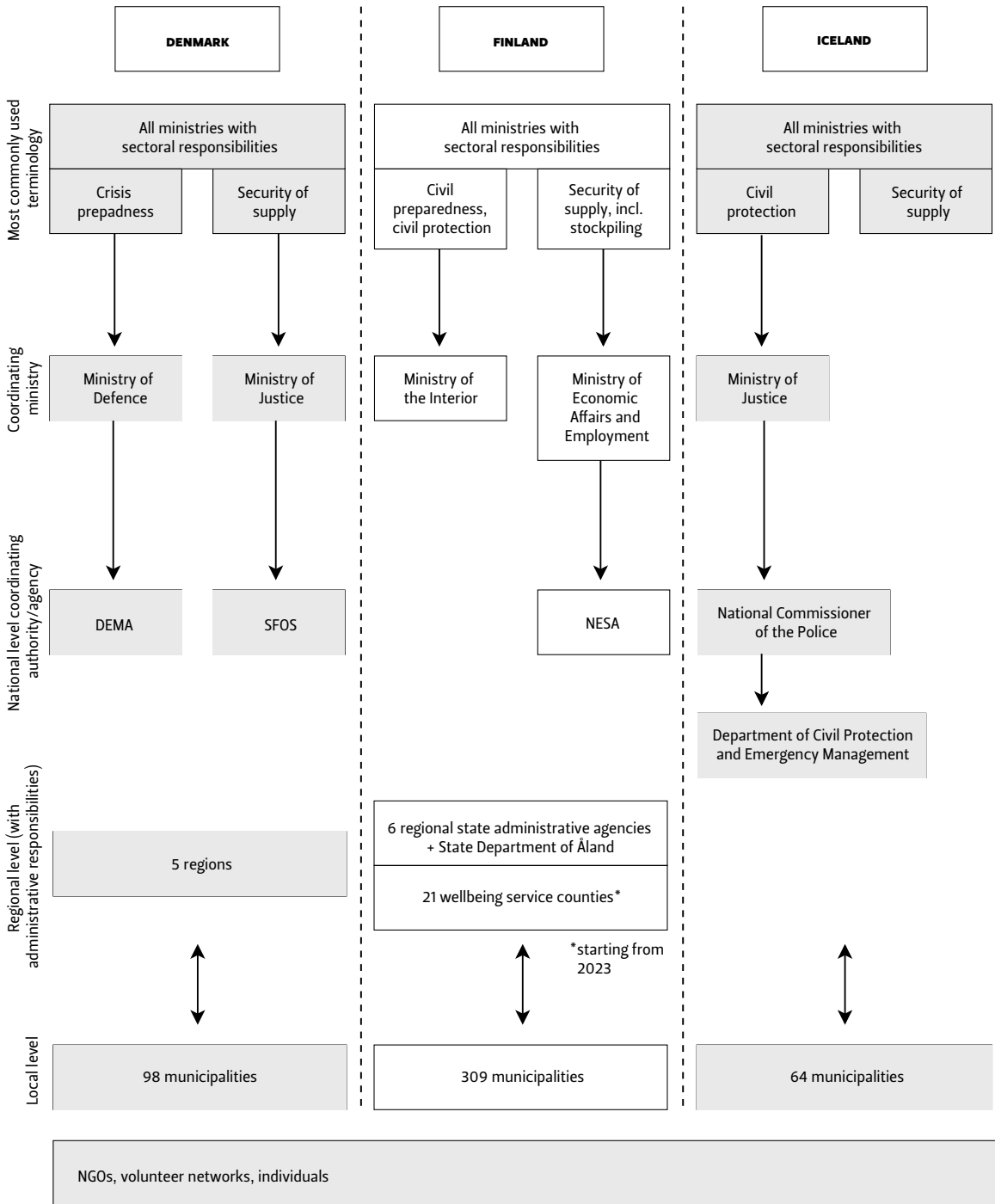239 Sweden's municipalities and regions website 2021.
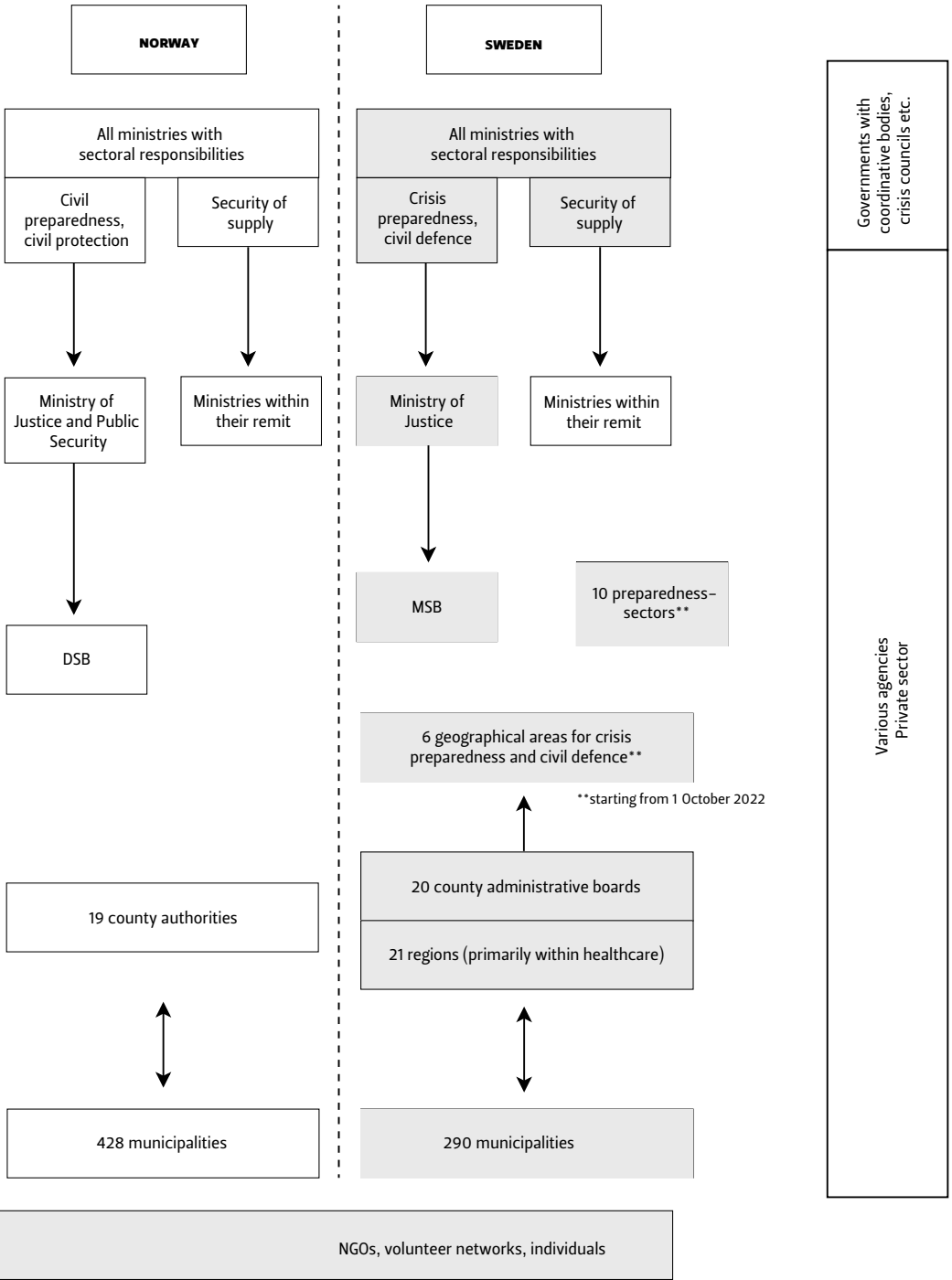
240 Ibid.

241 Government Offices of Sweden 2015.

242 Government of Sweden 2022d.

243 Written comments, 7 June 2022; see also Krisinformation.se 2022.

Table 2: Mapping of national actors' responsibilities in the Nordics.

	DENMARK	FINLAND	ICELAND
Most commonly used terminology	All ministries with sectoral responsibilities	All ministries with sectoral responsibilities	All ministries with sectoral responsibilities
	Crisis prepadness / Security of supply	Civil preparedness, civil protection / Security of supply, incl. stockpiling	Civil protection / Security of supply
Coordinating ministry	Ministry of Defence / Ministry of Justice	Ministry of the Interior / Ministry of Economic Affairs and Employment	Ministry of Justice
National level coordinating authority/agency	DEMA / SFOS	NESA	National Commissioner of the Police → Department of Civil Protection and Emergency Management
Regional level (with administrative responsibilities)	5 regions	6 regional state administrative agencies + State Department of Åland / 21 wellbeing service counties* (*starting from 2023)	
Local level	98 municipalities	309 municipalities	64 municipalities

NGOs, volunteer networks, individuals

NORWAY

SWEDEN

All ministries with sectoral responsibilities

Civil preparedness, civil protection

Security of supply

Ministry of Justice and Public Security

Ministries within their remit

DSB

All ministries with sectoral responsibilities

Crisis preparedness, civil defence

Security of supply

Ministry of Justice

Ministries within their remit

MSB

10 preparedness–sectors**

6 geographical areas for crisis preparedness and civil defence**

**starting from 1 October 2022

19 county authorities

20 county administrative boards

21 regions (primarily within healthcare)

428 municipalities

290 municipalities

NGOs, volunteer networks, individuals

Governments with coordinative bodies, crisis councils etc.

Various agencies Private sector

In **Denmark**, the main responsibility for guiding and analysing crisis preparedness lies with the Danish Emergency Management Agency (DEMA). DEMA's work aims at professionalising the whole-of-society approach; it guides, manages and coordinates preparedness planning at the state, municipal and regional levels. DEMA reviews municipal and authority preparedness plans but has no mandate to approve or disapprove them.[244] It also gives advice on crisis management, conducts crisis preparedness exercises and has its own international networks. In line with the requirement of the EU Civil Protection Mechanism, DEMA publishes regular National Risk Profiles (NRP), which identify the main risks for Danish society, including incident types and trends. The NRPs provide a reference frame "for acute risks of broad societal relevance and can form part of the foundation for emergency management planning within the national crisis management system."[245] DEMA's regular national risk assessment does not include specific analyses for the autonomous territories within the Kingdom of Denmark. In fact, it has been recently recommended that with the support of the Danish authorities, specific national risk analyses should be developed for Greenland and the Faroes.[246] The Danish Critical Supply Agency "supports the Danish society in preventing and handling present and future crises of critical supply",[247] which is done by collaborating with other agencies, regions and municipalities. Established in 2020, it supplied critical equipment and managed stocks during the Covid-19 crisis, among other tasks.

The Emergency Management Acts of **Greenland** and the **Faroe Islands** define sector responsibility as the key principle both in times of normalcy and crisis and according to it, each sector is responsible for its own planning and management of crises.[248] As mentioned, Denmark plays a bigger role in the Greenlandic preparedness system in comparison with that of the Faroes. While the Faroe Islands do not have a national emergency system or agency, the Ministry of Fisheries is responsible for national emergency preparedness as well as search and rescue.[249]

In comparison with the other Nordic agencies, the **Finnish** National Emergency Supply Agency (NESA) has a more special focus on crisis preparedness and security of supply. The NESA is a government organisation operating under the Ministry of Economic Affairs and Employment. The

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244 Written comments, 4 July 2022.

245 Danish Emergency Management Agency 2017, p. 4.

246 Dahlberg 2022a.

247 Danish Critical Supply Agency (n.d.).

248 Dahlberg 2022b.

249 Government of the Faroe Islands (n.d.e).

NESA "coordinates preparedness cooperation between the private and public sectors; oversees the practical arrangements related to the maintaining of national emergency stockpiles and compulsory stockpiles; ensures the functionality of essential technical systems and safeguards critical goods and service production; as well as monitors international developments and maintains contact with foreign authorities and institutions."[250] In concrete terms, the NESA develops continuity management tools for companies and organises joint exercises for companies and public authorities, plans and finances various redundancy and auxiliary arrangements within IT and communications, supports the operating preconditions of production supportive of military defence in collaboration with the Finnish Defence Forces and oversees various forms of stockpiling (e.g. energy, pharmaceuticals, grain) to ensure security of supply.[251] Because of its strong focus on stockpiling, the NESA deviates from the other Nordic agencies, in which this focus is either largely non-existent or which place a clearer emphasis on just-in-time logistics. While Finland also incorporates this principle to some extent and relies on securing the continuation of critical flows of goods, stockpiling is meant to serve as a cushion in times of disruptions.

STOCKPILING

The experiences of shortages during the Covid-19 pandemic have also catalysed calls in the other Nordics for more focus on stockpiling and the establishment of national preparedness agencies with more centralised national responsibilities for security of supply in general.[252] **Sweden** engaged in large-scale stockpiling during the Cold War but abandoned it in the 2000s as a result of the changes in its threat assessments. Currently, MSB does not focus on stockpiling any goods other than oil, and the responsibility for security of supply is decentralised among several agencies, regions, county councils and companies. For example, a report issued by the Swedish Defence Research Agency (FOI) notes that "emergency stockpiling still exists in some Swedish sectors".[253] Moreover, the Public Health Agency stores some medicinal products against influenzas, for example, and the National Board of Health and Welfare stores some medical supplies such as infusion fluids and antidotes for chemical

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250 National Emergency Supply Agency (n.d.a).

251 Ibid.

252 See, for example, Macklean 2021.

253 Stenérus Dover et al. 2019.

and radionuclear incidents.[254] Calls have been made to strengthen MSB's stockpiling mandate.

In **Norway**, the Ministry of Trade, Industry and Fisheries is responsible for the security of supply for a number of commodities and services, especially food and fuel, and the other ministries are responsible for supplies within their remit, but these responsibilities do not involve a focus on stockpiling. In **Denmark**, the reaction to the pandemic crisis was prompt and resulted in the rapid establishment of a new agency, the Danish Critical Supply Agency (SFOS) in August 2020. Its main task is to support "the Danish society in preventing and handling present and future crises of critical supply."[255] While DEMA carries out important functions related to emergency preparedness and response, SFOS has emerged as a new authority for security of supply. Its functions have been focused on the pandemic response. For instance, SFOS has aided health agencies in Covid-19 testing and helped to build and manage Danish national stocks of personal protective equipment and other critical resources. However, the responsibilities of the agency might expand given that it is also expected to organise its activities to support society's preparedness "in connection with future crises, where scarcity of particularly critical resources can be foreseen."[256] Denmark also stockpiles about 80 days' worth of oil for the civilian sector, most of which is held by the Danish Central Oil Stockholding Entity (*Danske Olieberedskabslagre*, FDO).[257]

While many interviewees for this report reflected upon stockpiling as an option for increasing security of supply, most viewed it as unfeasible for their national systems largely because of the costs involved in building up, or, as in the case of Sweden, building back the system. As islands, **Iceland**, **Greenland**, the **Faroe Islands** and **Åland** are particularly dependent on well-functioning maritime and air cargo supply chains. In relation to the islands, the lack of options in logistics and transport was also mentioned as a key difference to the mainland states. Obviously, since they have very small markets and populations, they also lack the capacity for large-scale national production. In the case of the Faroe Islands, for instance, it is not only that they are dependent on supplies coming in, but also on them going out in time because the economy relies on aquaculture and fisheries, but the Faroes do not have sufficient storage capacity for the products.

254 Ibid.; Swedish Civil Contingencies Agency (n.d.d).

255 Danish Critical Supply Agency (n.d.).

256 Ministry of Justice of Denmark 2021.

257 Danish Central Oil Stockholding Entity (n.d.).

In Norway, as well, it was noted that the country's food self-sufficiency is low,[258] and that it is dependent on imported fodder, for example.[259]

Instead of traditional stockpiling, the experts who were interviewed for this report emphasised the significance of improving and securing supply chains and procurement. For instance, procuring items closer to home or diversifying supply options to reduce reliance on a single source of supply were seen as important. Some interviewees suggested initiating common Nordic production of vital items such as vaccines, or dividing the stockpiling or production of specific critical items between the Nordics so that each would have sufficient capacities in certain items to cover all the Nordics. Others proposed that the Nordics could share procurement because together, they have a strong consumer market, which can be used as leverage in international markets, which do not favour small actors.

LAYERS OF PREPAREDNESS – THE NORDIC WHOLE-OF-SOCIETY APPROACH

As most emergencies are local in nature, regions and municipalities play an important role in the Nordic preparedness approach. Local authorities' activities are often complemented by a large number of volunteers and in most Nordic countries, non-governmental organisations play a central role in providing services, coordinating the participation of volunteers in activities that support authorities and maintaining special expertise in areas such as contingency operations.

Iceland differs from the other Nordic countries in that it only has two levels of administration: the central/national and the local.[260] The local authorities are responsible for civil protection at the local level in conjunction with the central government. They have an obligation to analyse risks and resilience and to prepare response plans that pay attention to the four guiding principles defined for the coordination of civil protection. Iceland perhaps embodies the Nordic whole-of-society approach more fully than any of the other Nordics. On an island prone to natural hazards, preparedness is everyone's business. Icelandic volunteer work also has a long tradition of rescuing ships. Unlike in the bigger Nordic countries that have more significant civil protection capacities, Icelandic local-level emergency management relies on volunteers. The advantages of the small

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258   Interviews, 30 November 2021 and 18 February 2022.

259   Interview, 30 November 2021.

260   European Commission (n.d.).

and close-knit[261] population include well-functioning cooperation among civil servants in all sectors and at only two levels of administration.

Moreover, the communication between the capital and local communities is seemingly straightforward. Two non-governmental rescue organisations, the Icelandic Association for Search and Rescue (ICE-SAR) and the Icelandic Red Cross, have seats on the Civil Protection and Security Council. The Civil Protection Act entails a civic duty "in times of peril": according to Article 19 of the act, all persons aged between 18 and 65 must perform work in "the service civil protection in the administrative areas in which they reside" without compensation and as instructed by the police commissioner.[262] Decisions taken by police commissioners may be referred to the Minister of the Interior. Skills training and emergency preparedness activities are carried out locally by volunteers and civil society organisations.

In **Finland**, the Finnish Red Cross and the Finnish National Rescue Association (*Suomen Pelastusalan Keskusjärjestö*, SPEK) play a central role in providing services, coordinating the participation of volunteers to support authorities and maintaining special expertise in areas such as contingency operations.[263]As the 2017 *Security Strategy for Society* states, "regional administration, municipalities and business communities and organisations manage preparedness planning in cooperation with other authorities, business operators and organisations […] [with the help of] cooperation agreements, competence development, training, exercises, [as well as] contingency and preparedness planning."[264] The Regional State Administrative Agencies, so-called AVI Centres (*aluehallintovirasto*), are responsible for coordinating preparedness in their regions, arranging training and exercises, and supporting preparedness planning in municipalities. Municipalities are expected to act in crisis situations based on statutory contingency planning, and each of the sectors responsible for municipal services prepares its own plans for crisis situations.

In **Norway**, DSB coordinates the County Governor, which is the government's representative in municipal and regional public security and emergency preparedness activities at the county level. It is in charge of maintaining an overview of risks and vulnerabilities, which is done with the help of risk and vulnerability analyses prepared in cooperation with regional actors. DSB also oversees the work of the Civil Defence, which is a uniformed, protected governmental reinforcement resource,

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261 Bird & Gísladóttir 2012.

262 Government of Iceland 2017.

263 The Security Committee 2017.

264 Ibid.

organisationally divided into 20 regional districts. Its main function is to ensure civil protection measures in wartime, but it also assists the rescue services, emergency and preparedness agencies and other authorities in events such as major accidents, large-scale fires, floods, landslides, oil spills or searches for missing persons during peacetime.[265]

Meanwhile, municipal authorities play a central role in civil protection and emergency preparedness work. They coordinate civil protection in their local communities by preparing integrated risk and vulnerability analyses and emergency plans, and conducting exercises, for example. In addition, voluntary rescue and emergency preparedness organisations form an important part of the crisis preparedness and management system, particularly by contributing to the resources available for local emergency preparedness. While a range of different organisations participate in the work, the Norwegian Voluntary Professional Rescue Organizations' Forum provides an umbrella for Norwegian voluntary rescue services.[266]

Four overarching principles guide Norwegian public security and civil preparedness work: responsibility, similarity, proximity and cooperation. Similarly to the other Nordic countries, the responsibility principle spells out that in a crisis, the responsibility for a specific function lies with the organisation that is responsible for it on a day-to-day basis. The principle of similarity means that during a crisis, an organisation's operations should remain as similar as possible to its day-to-day operations. The principle of proximity requires that crises should be handled at the lowest possible organisational level. Finally, according to the principle of cooperation, the various organisations and actors that work on preparedness have an independent responsibility to ensure the best possible cooperation with relevant parties.[267]

In **Sweden**, regions and county councils are key in crisis management and civil preparedness activities, which are organised based on three fundamental rules: vicinity, similarity and responsibility. This means that crises should be managed at the lowest organisational level and operations carried out in a similar fashion whether in peace, crisis or war. Following these principles, municipalities have the initial responsibility, but the Covid-19 pandemic emphasised the need for a national approach and coordination. There were, however, several good examples of how regions developed relations with the private sector, for example.[268] The state is also present in the regions through the County Administrative

265 Norwegian Ministry of Defence & Norwegian Ministry of Justice and Public Security 2018.

266 Norwegian Ministry of Defence & Norwegian Ministry of Justice and Public Security 2018.

267 Ministry of Justice and Public Security 2016, p. 9.

268 Interview, 3 December 2021.

Boards, which serve as a link between the state and the municipalities and inhabitants. In some cases, the boards may take over municipal responsibilities if the resources at the local level are insufficient. The coordination of responses to forest fires is a good example as national coordination is required when fires impact several municipalities simultaneously. While the municipalities report to the County Administrative Boards the regions report to the National Board of Health and Welfare and MSB.[269] Moreover, those in charge under normal circumstances are also responsible in times of crisis or war. As the main responsibility lies with the authorities, and no one authority has comprehensive responsibility for all the sectors at the national level, discrepancies exist not only between various sectors but also between regions.

The structural reform of Swedish crisis preparedness and civil defence that will enter into force on 1 October 2022 aims to assign clearer responsibilities to national civil preparedness agencies and to clarify the responsibilities of all the state agencies in their own area, as well as in elementary preparedness. After the structural reform, each sector will have one agency that has sectoral responsibility, and it will be exercised by developing crisis preparedness within the sector, supporting the national crisis preparedness agencies and ensuring coordination with other relevant actors. It will be crucial to ensure that crisis preparedness planning is coherent at all administrative levels – the national, regional and local.[270] Following the pandemic, the clarification of roles and responsibilities was considered particularly important in the interviews, because although the Swedish preparedness system functions well in the case of everyday accidents, rare and more serious incidents, accidents and issues challenge the civil preparedness system.[271]

Interestingly, **Åland** has cooperated with Sweden in many instances, which derives not only from the fact that Swedish is the only official language in Åland (as well as the language of all communication between Ålandic and Finnish authorities), but also from the more regional approach that Sweden was perceived to have in comparison with Finland.[272] Overall, according to the President of the Republic's Regulation on Management in the Åland Islands of Preparatory Tasks for Emergency Situations, preparedness and security of supply activities are carried out in cooperation between the authorities of Åland and mainland Finland.[273]

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269 Parliament of Sweden 2006.

270 Written comments, 3 June 2022.

271 Interviews, 2 December 2021 and 3 December 2021.

272 Interview, 17 February 2022

273 Government of Åland 2000.

Under certain conditions, Ålandic voluntary organisations may also receive preparedness responsibilities.[274]

In **Denmark**, a broad range of authorities and organisations are engaged in preparedness and the management of crises and emergencies, thus ensuring that Danish society remains safe and functional.[275] The Danish crisis management system is based on the precondition that all central government, regional and local authorities are responsible for familiarising themselves with and preparing themselves for their respective roles and responsibilities. The system builds on a clear structure and operates through seven general principles of preparedness planning and crisis management: sectoral responsibility, similarity, subsidiarity, cooperation, precaution, flexibility and direction.[276] The principle of subsidiarity should not, however, prevent the involvement of higher levels in the crisis management system if the situation so requires.[277]

Arguably, the local level is particularly important for the self-governing regions. In **Greenland**, the primary responsibility for civil protection lies with municipalities. When a severe catastrophe or accident happens, the government may become involved[278] or issue assessments or evaluations of the crisis.[279] During the 2017 tsunami and the 2019 wildfires in Sisimiut, the Arctic Preparedness Force was activated.[280] After the tsunami and landslide in Karratfjord in 2017, the Parliament of Greenland decided to conduct a report to assess municipal preparedness for catastrophes.[281] With Nuuk being the biggest town with 20,000 inhabitants, and others ranging from a few hundred to a few thousand inhabitants, this also means that organised preparedness functions are not always necessary or possible and receiving help may take a long time. One interviewee noted that some small towns may have one or two firefighters, while mostly relying on volunteers. However, the very small communities also mean that individual preparedness is relatively high: people help out one another and are personally better prepared due to their everyday practices such as hunting and fishing.[282]

274 Ibid.

275 Danish Emergency Management Agency 2017.

276 Danish Emergency Management Agency 2019; written comments, 23 March 2022.

277 Ibid.

278 Interview, 4 February 2022.

279 Ibid.

280 Written comments, 4 July 2022.

281 Government of Greenland 2018.

282 Interview, 4 February 2022.

Interestingly, in Greenland, the so-called precautionary principle (*forsigtighedsprincippet*) applies during events such as major fires or explosions, shipping accidents, aircraft crashes, environmental disasters, major disease outbreaks and long power cuts. This means that when there is uncertainty about an event, it is better to activate even too high a level of preparedness than the other way around. On the other hand, this system should be agile enough to be able to bring down the level of preparedness so as not to waste resources.

In the **Faroe Islands**, emergency preparedness is the responsibility of local authorities, but their work is complemented by a vast network of volunteers.[283] Some of them, involved in search and rescue, for example, receive an annual budget from the Ministry of Fisheries.[284] The ministry oversees the municipal preparedness activities.[285] The different position of self-governing regions was also highlighted by our Faroese interviewees. Similarly to the difficulties faced by some Swedish regions during the Covid-19 crisis, the Faroe Islands were reliant on Denmark to buy vaccines and other medical supplies because only states were able to procure necessary supplies.

283 Dahlberg 2022a.

284 Interview, 10 January 2022.

285 Nordforsk 2021b.

4 VITAL FUNCTIONS OF SOCIETY

INTRODUCTION

Preparedness planning requires knowledge of what essential systems are needed to maintain the basic functioning of society in a crisis situation. When the vital systems are identified, they can be safeguarded to strengthen the resilience of society. This also helps to assign responsibilities to various authorities and administrative levels so that they will function in a coherent way when necessary. In the Nordic context, the systems that maintain the basic functioning of society are usually referred to as vital or critical functions of society.[286] These can be broadly understood as the infrastructure and technological systems and services critical to the functioning of society, and the institutions that maintain them.[287]

The idea of securing vital functions is connected to societal resilience, which can here be defined as society's ability to resist and recover from shocks and crises.[288] Resilience is based on the security of society's vital systems, such as key infrastructures, institutions and public services. Equally, the functions and services they perform are critical to maintaining economic and political order.[289] To achieve society-level resilience, these various elements must be in place and as well prepared as possible to hold in a crisis.

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286 Pursiainen 2018.

287 Olsen et al. 2007.

288 NATO 2021a.

289 Collier & Lakoff 2015.

The emphasis on critical functions also partly stems from the broadening of defence and security into the civil sector, which has linked the idea of critical functions to the concepts of civil defence and total defence, which have become a central part of security policy in the Nordic countries. Critical functions are also essential from the perspective of the military aspects of defence because they contribute to a robust society and therefore reduce its vulnerability to aggression.[290] At the same time, increasing attention has been paid to unconventional threats such as natural disasters, making it obvious that security does not depend on the military alone. The wider society also needs to contribute to national security.[291]

The concept of vital functions is often used interchangeably with or complementarily to critical infrastructure. The EU, for instance, defines critical infrastructure as an asset or system that is essential for the maintenance of vital societal functions.[292] In other words, critical infrastructure enables the continuity of vital functions but is also shaped by them. The 2008 Directive on European Critical Infrastructures established a procedure for identifying and designating European critical infrastructures and improving their protection. At the moment, the EU is in the process of preparing the CER Directive on the resilience of critical entities, aimed at deepening critical infrastructure protection and broadening its sectoral scope.

NATO also includes critical infrastructure as part of its civil preparedness approach and as one of the elements needed for enhanced resilience. NATO has pointed out that a large part of the critical infrastructure in its member states and globally is owned by private sector actors. This means that critical infrastructure needs to be considered in new ways, in cooperation with the private sector. However, this is complicated by the business environment and its tendency to optimise supply chains based on profit, which reduces their ability to withstand shocks and adapt to changes.[293]

FRAMEWORKS FOR CRITICAL FUNCTIONS IN THE NORDIC COUNTRIES

There is no common understanding of or framework for critical functions among the Nordic countries. Their systems have some similarities, and the countries have been influenced and inspired by one another's examples. Based on our interviews, some discussion and information sharing on

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290   Ministry of Defence & Ministry of Justice and Public Security of Norway 2018.

291   Collier & Lakoff 2015.

292   European Commission (n.d.a).

293   NATO 2021b. Civil preparedness.

critical functions have taken place between Norway, Finland and Sweden in particular. In addition, civil preparedness actors in Iceland have looked to Norway when considering their country's critical infrastructure. These exchanges suggest that the countries stand to gain from their respective approaches to securing societal functions. Therefore, there appears to be potential for further discussion and joint consideration of critical functions, with the possible aim of producing shared Nordic categorisations or criteria.

Among the Nordic countries, Norway and Finland presently have the most structured approaches to vital functions. For Finland, they constitute a central feature of the model of comprehensive security, in which the aim of preparedness is to safeguard society's vital functions in cooperation between the authorities, business sector, non-governmental organisations and individuals.[294] In Norway, the ability to maintain and restore vital functions is equally seen as key to the Norwegian concept of societal security, and it is also included in the *Instructions for the Ministries' work with civil protection and emergency preparedness*.[295]

The process to define **Norway's** critical societal functions was started in 2008, with the second and latest update provided in a report prepared by DSB and commissioned by the Ministry of Justice and Public Security.[296] The process for a new update is currently ongoing.[297] The Norwegian Ministry of Justice and Public Security maintains an updated list of the main responsible ministries for each function and other responsible agencies.[298] Societal functions are considered vital if they are necessary to meet the basic needs of the population and society within a timeframe of seven days, and a failure to provide them would threaten the security of society. The underlying idea is to identify the critical elements of societal functions to enable better coordination and awareness between the different responsible actors, and thereby provide a better foundation for security work across and within sectors.

In the DSB report, the basic needs of the population and society are divided into three categories based on the aspect of societal security that they ensure. Governability and sovereignty are related to territorial and governance-related integrity, while the security of the population refers to protection against death, physical injury or illness, loss of democratic rights and personal integrity, and loss of or harm to the living

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294   The Security Committee 2017.

295   Norwegian Directorate for Civil Protection 2017a.

296   Interview, 29 November 2021; ibid.

297   Interview, 30 November 2021.

298   Ministry of Justice and Public Security of Norway 2021.

environment, property or material assets. Meanwhile, societal function-ality covers the continuity of supply and infrastructure-based services. The vital functions that ensure these basic needs were identified through expert consultations, resulting in a list that includes 14 vital functions: governance and crisis management; defence; law and order; health and care; emergency services; ICT security; nature and the environment; se-curity of supply; water and sanitation; financial services; power supply; electronic communication network and services; transport; and satel-lite-based services. The list is subject to updates as necessary.[299]

In the DSB report, each vital function is further described in terms of the capabilities needed to ensure their continuity. As a rule, these include the relevant authorities or other institutions responsible for maintain-ing the function, but the number and scope of capabilities specified for each function varies. For instance, the capabilities identified for the vital function of governance and crisis management are constitutional bodies and the administration, and emergency response and crisis management, while the vital function of law and order depends upon the capacities of rule of law, crime countering activities, investigation and prosecution, peace and order, border control, and security of prisons and institutions.[300]

The main responsibility for each vital function is assigned to the rele-vant ministry, but a number of other actors from authorities and munici-palities to private sector firms are listed as contributors to the capabilities ensuring all of the vital functions.[301] It is up to the owners or operators of critical infrastructure and services to ensure continuous functionality and engage in contingency planning. The maintenance of the vital func-tions therefore also involves the private sector and broader civil society. On the other hand, authorities are responsible for offering direction and guidance, setting requirements and supervising the systems.[302]

Due to the all-hazards approach that Norway applies, as do all the Nordic countries, the critical functions of society do not feature promi-nently in the process through which crisis scenarios are developed. Al-though they are mentioned when identifying the consequences of possible events, they are not used for any systematic assessment. Instead, the consequences are evaluated in terms of broad sectors of society such as "nature and culture" and "the economy".[303] In other words, there does

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299   Norwegian Directorate for Civil Protection 2017a.

300   Ibid.

301   These are only listed in the longer Norwegian language version of the report: Norwegian Directorate for Civil Protection 2016.

302   Ibid.

303   Norwegian Directorate for Civil Protection 2019b.

not appear to be a clear link between critical functions and crisis scenarios, or a comprehensive methodological basis for their application.

In **Finland**, the 2017 *Security Strategy for Society* document lists the vital functions of society that must be maintained in all situations. They include leadership; international and EU activities; defence capability; internal security; functional capacity of the population and services; psychological resilience; and economy, infrastructure and security of supply.

As the strategy states, functioning leadership provides the basis for safeguarding all the other functions. The same applies to international cooperation – not only in crisis response, but also in crisis prevention, in which the security cooperation in various EU structures, for example, plays an important role. When it comes to military defence, Finland has traditionally put a lot of emphasis on national defence capability, which is intended to provide deterrence against external threats and safeguard Finland's independence, sovereignty and territorial integrity. Internal security, in turn, is important in preventing and countering criminal activities, as well as in preventing and managing accidents, environmental damage and other incidents and threats, including hybrid influencing. The functional capacity of the population and services refer to the maintenance of key services that ensure the wellbeing of the population. Psychological resilience means the ability of individuals, communities, society and the nation to withstand crisis situations and recover from their impacts. The security strategy also stresses the importance of the functioning of the economy, infrastructure and security of supply.

The 2018 *Government Decision on the Objectives of Security of Supply* provides a more nuanced picture of Finnish security of supply priorities and the related threats. As the Finnish security and operation environment is to a large extent determined by international (inter)dependencies and the effective functioning of global value chains, the 2018 decision stresses the importance of international cross-border cooperation in safeguarding the availability of materials and resources that are critical to security of supply. In addition to other external sources of disturbances, the decision highlights traditional geopolitical threats, which may in some scenarios also endanger Finland's critical international connections and lifelines in the Baltic Sea region. The 2018 decision also stresses the safeguarding of critical infrastructure, which is considered indispensable for the vital functions of society. Critical infrastructure is defined as all the basic structures, services and activities that are necessary for maintaining society's vital functions. In other words, in the Finnish perspective, critical infrastructure is separate from the vital functions and considered a prerequisite for their continuity.

In **Sweden**, a recent regulation defines "activities important to society" (*samhällsviktig verksamhet*) as activities, services or infrastructure that maintain or ensure societal functions necessary for the fundamental needs, values and security of society.[304] Along similar lines, MSB's report *Strengthening civil preparedness* defines critical infrastructure as "activities, services or infrastructures that maintain or safeguard functions essential for society's basic needs, values, safety or security."[305] However, there is no commonly agreed definition of what critical infrastructure entails in more detail.[306] MSB has identified a list of vital functions to support preparedness work, which includes the following 15 vital functions: child care and education; water, sanitation and waste management; economic security; energy supply; financial services; trade and industry; health and healthcare; information and communication; food security; public administration; public order and security; human resources; rescue services and civil protection; and transport.[307] Each function contains one or more specific activities that are critical to the functioning of society. The list overlaps considerably with the functions identified by Norway and Finland. To strengthen the resilience of critical societal functions, the Swedish Government will shortly implement a reform that will establish ten civil preparedness sectors, within which preparedness work is to be coordinated between various sectors and authorities. The preparedness authorities will be in charge of this coordination and have respective sectoral responsibility. The sectors will be economic security, electronic communication and mail, energy supply, financial services, supply of basic data, health and care, food supply and drinking water, public order and security, rescue services and civil protection, and transport.[308]

In other Nordic countries, the idea of listing vital functions is more recent and, at least so far, less prevalent. **Denmark** uses the term critical infrastructure, which is defined in the most recent National Risk Profile as "infrastructure – including facilities, systems, processes, networks, technologies, assets and services – that is necessary to maintain or restore functions vital to society."[309] Denmark follows a three-step approach, in which critical infrastructure is defined as the subcomponents of a variety of vital societal functions, and the vital societal functions constitute the subcomponents of 11 vital societal areas or sectors. These sectors include

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304   Parliament of Sweden 2022.

305   Swedish Civil Contingencies Agency 2021a.

306   Swedish Civil Contingencies Agency 2021d.

307   Swedish Civil Contingencies Agency 2021b.

308   Government Offices of Sweden 2022.

309   Danish Emergency Management Agency 2022.

energy, information and communication technology (ICT), transport, contingency planning and civil defence, healthcare, drinking water and food, wastewater and waste disposal, finance and economics, meteorology, exercise of authority in general, and interdepartmental crisis management. Each of these sectors include a number of vital societal functions (as mentioned in the definition of critical infrastructure). A separate working group under the Ministries of Defence and Justice maintains a list of the vital societal functions and the underlying critical infrastructure.

Iceland is currently in the process of mapping critical infrastructure. The first report on the subject will be published in the summer of 2022. According to our expert interviews, Iceland has increased its focus on civil critical infrastructure over the recent years. Efforts such as working groups and projects are ongoing to plan activities concerning civil protection and critical infrastructure.[310] There is therefore an increasing interest in the topic in Iceland.

The **Faroe Islands**, **Greenland** and **Åland** do not have their own systems of critical functions. However, supply chain security and transport links have a particular significance for both the Faroe Islands and Greenland due to their physical distance from other countries.[311] Åland, on the other hand, is not only physically closer to mainland Finland, but also closely linked to the Finnish civil preparedness system and therefore to the Finnish perception of vital functions as well.

Overall, there are significant differences in the use of terminology regarding society's vital functions between the Nordic countries. Critical infrastructure and vital functions, in particular, are sometimes used in overlapping contexts, although all the countries tend to make some reference to and distinction between these terms. In addition, the significance and role of the vital functions framework vary in the preparedness planning of the different countries. On the other hand, Denmark and Iceland have only recently prepared their lists of critical infrastructures and could well put an increasing emphasis on using them more in the future.

Despite the differences, it is important to note that all the countries do have a concept of vital functions of society, whether in the form of an officially adopted list or an informal tool for preparedness planning in a specific context. All the countries see the need to safeguard specific societal functions as a precondition for resilience and have thus adopted a whole-of-society approach in the sense of including actors from all functions of society in preparedness planning.

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310   Interview, 3 March 2022.

311   Interviews, 10 January 2022, 9 February 2022 and 11 February 2022.

VITAL FUNCTIONS IN PRACTICAL PREPAREDNESS PLANNING

In **Norway**, the vital functions are implemented in contingency planning regionally and locally in addition to the national level. They can be useful in illustrating the comprehensive context of a specific aspect of preparedness, which was done in a recent project studying the consequences of electricity outages in municipalities. They have also been used during the Covid-19 pandemic to determine, for example, which personnel groups are involved in critical functions and therefore entitled to access daycare for children and other services so that they can go to work.

Finland has a similar model, in which the vital functions are implemented at multiple levels of administration and by various actors of society and its infrastructure. The main responsibility for managing and monitoring the protection of vital functions lies with line ministries, but authorities, the private sector and civil society organisations are expected to develop and maintain regional and local cooperation on the implementation of this work. Society's vital functions are considered to form the basis of preparedness planning at all levels of administration.[312]

As **Sweden** has no official list of vital functions, they are not implemented in a similar cross-cutting way. Each authority responsible for preparedness identifies functions in its own civil defence reporting. However, the identification of vital functions by MSB specifically aims to support the work of actors responsible for various critical entities, either in the public or private sector. Yet, as mentioned above, it does not provide a comprehensive or binding list of the functions, and instead serves as a set of examples. In addition, the list does not include any guidance as to the prioritisation of functions during a crisis.[313]

In **Denmark**, the work on critical infrastructure resembles the Norwegian and Swedish activities. However, Denmark has taken a step further and defined physical activities as well. The list of 11 vital sectors is mentioned in the latest National Risk Profile as a basis for formulating the threat scenarios outlined in the document.[314] In 2021, Denmark also introduced the Investment Screening Act, which includes a list of 11 critical infrastructure sectors relevant for foreign direct investment.[315] In **Iceland**, the mapping of vital functions has been so recent that the implementation is largely yet to follow.

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312 The Security Committee 2017.

313 Swedish Civil Contingencies Agency 2021b.

314 Danish Emergency Management Agency 2022.

315 Ministry of Industry, Business and Financial Affairs of Denmark 2021.

DEVELOPMENT NEEDS FOR VITAL FUNCTIONS

In all the Nordic countries, the recent experience of the Covid-19 pandemic and the increased importance of civil preparedness overall have directed attention to vital functions and potential needs to further develop the ways in which they are used and conceptualised. In **Norway**, the pandemic revealed that the list of vital functions lacks some elements that the pandemic period has shown to be critical, which include media, schools and social services. In addition, a need for a broader discussion about the premises of defining vital functions has been suggested. For instance, they have been based on an approach in which preparedness is viewed comprehensively, and all functions are perceived as equally important. However, recent experience supports the previous observations that prioritisation between them may also be necessary and justified as situations evolve in a crisis.[316]

In **Finland**, vital functions have not been identified as a particular deficiency in the various evaluations concerning the crisis response during the pandemic. Unlike in Norway, a need to reconsider the scope and coverage of these functions has not been raised. However, the importance of security of supply and logistics has been pointed out, especially in the case of medical products, and attention has been paid to the importance of also better defining the responsibilities concerning vital functions in the private sector.[317]

In **Sweden**, efforts to develop the approach to vital functions is linked to the wider reform of total defence planning. In the broader picture of aligning military and civil defence, as well as civil defence and crisis preparedness, they have the common goal of mitigating the impact of societal disruptions and ensuring the continuation of vital societal functions. The baseline for a streamlined system is to safeguard vital societal activities, which means the ability to "prevent, handle and recover from strains on the activities and functions that are important for the life and health of the population, functioning of society and fundamental values".[318]

In the interviews, it was also highlighted that the more robust the preparedness system is, the better it can tolerate a variety of threats challenging it.[319] Indeed, the pandemic contributed to a better identification of some crucial functions in the emergency response, such as ones related to families in which the parents are employed in critical sectors and the

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316   Interview, 29 November 2021; Maal et al. 2017.

317   National Emergency Supply Council 2020.

318   Swedish Civil Contingencies Agency 2018.

319   Interview, 13 December 2021.

children should therefore be allowed to attend school or daycare. However, it was noted in the interviews that the identification of the most critical functions to protect and build should be done well in advance, not in the midst of a crisis.[320]

In **Denmark** and **Iceland**, an increased emphasis on safeguarding societal functions has contributed to the concrete efforts to map and list critical infrastructure. Vulnerabilities in critical areas of supply chains in the EU have been exposed during and after the Covid-19 pandemic, as the competition over protective equipment during the pandemic and the currently rising energy prices have highlighted.[321] More remains to be done in the self-governing regions as well. For example, in **Greenland**, the power outage in Nuuk in late 2021 has prompted some thoughts about critical infrastructure and vulnerabilities.[322]

VITAL FUNCTIONS IN THE INTERNATIONAL CONTEXT

While NATO's seven baseline requirements, adopted at the NATO Summit in Warsaw in July 2016, can be seen as including the objective of safeguarding critical infrastructure, they were generally not described as an overarching framework that guides Nordic work on vital functions in our interviews. In the case of Norway, it was pointed out that the country has actively promoted the approach of defining and strengthening critical societal functions within NATO.[323] A cross-sectoral programme has been set up under the Ministry of Justice and Public Security to ensure the further development of total defence and the robustness of the critical societal functions.[324] NATO's baseline requirements appear to be complementary to Norway's own work in this area, and they provide the added value of unifying the resilience and preparedness systems of different countries.[325]

Similarly, the EU Commission's proposal for a new directive on the resilience of critical entities was not particularly highlighted in the interviews. The new directive is likely to have some impact on the planning of vital functions in the EU member states because it aims to create an all-hazards framework to contribute to ensuring that critical entities (including infrastructure and services) are able to prevent, resist, absorb

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320 Interview, 13 December 2021.

321 Ministry for Foreign Affairs of Denmark (n.d.a), p. 29.

322 Written comments, 4 July 2022; see also Dahlberg 2022b.

323 Ministry of Justice and Public Security of Norway 2016.

324 Ministry of Defence & Ministry of Justice and Public Security of Norway 2018.

325 Interview, 30 November 2021.

and recover from disruptive incidents.[326] This could potentially bring about a need to reconsider some parts of the existing system or create parallel structures in countries like Finland that already have a distinct list of critical functions. On the other hand, it may present an opportunity to build upon the existing system while streamlining it with the other EU countries.

It would be feasible and beneficial to increase cooperation on the topic of society's vital functions among the Nordic countries. Despite the obvious differences in the existing frameworks, the basic elements guiding the approach to societal functions are shared between the countries. First, all the Nordic countries rely on some form of societal security, in which the involvement of civil actors in the protection of vital functions is considered essential. Second, the countries tend to apply an all-hazards approach, with the aim of preparing for a wide variety of threats that could cause disruptions to societal functions, including non-conventional threats such as environmental hazards and health risks. Third, the countries also implement a whole-of-society approach, involving actors from all functions of society in preparedness planning.

Societal resilience and critical functions will need to be developed in all the Nordic countries. For example, in Norway, the pandemic experience has already showed how the vital functions can support preparedness planning, while also pointing out gaps in the system that need to be addressed. Such calls for further development are likely to become more forceful in the situation brought about by Russia's recent large-scale attack on Ukraine. The current discussion in Iceland, for instance, also suggests an increasing attention to critical functions and an openness to gaining from other Nordic countries' experiences.

While an overarching, shared Nordic framework for vital societal functions may not be realistic or even necessary, an increased exchange of information and cooperation may advance the development of the system in each country, including the self-governing regions, which is a recommendation highlighted in previous reports.[327] The Nordic discussion may also benefit from and be coordinated through the concurrent processes related to the EU's CER Directive, as well as NATO's baseline requirements. In the longer run, cooperation on vital functions may support the development of a broader Nordic resilience approach.

326   European Commission 2020a.

327   See, for example, Dahlberg 2022a.

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5 PUBLIC–PRIVATE SECTOR DIALOGUE

INTRODUCTION

Public and private sector cooperation is critical to ensuring crisis preparedness and security of supply.[328] Many critical functions in Nordic societies are operated by private enterprises. All the Nordics also depend on imports in a large number of resources, goods and services.[329] For instance, in Sweden, almost all critical supply chains are operated by the private sector. This also applies to critical infrastructure and many important societal functions. Preparedness and crisis response therefore require extensive collaboration among authorities, businesses and industry organisations. Such cooperation forms an essential part of any whole-of-society approach to preparedness.

While the inclusion of the private sector in preparedness has become a necessity because of the privatisation of many critical functions, the private sector also has many advantages over the public sector in some areas of preparedness. Private companies can be more agile and more capable to respond quicker to disruptions and crises. According to some estimates, they are often ahead of public authorities in continuity planning.[330] Engaging with private companies also helps to attract investment to complement public financing in important infrastructure development projects.[331]

328 See, for example, National Emergency Supply Agency (n.d.d).

329 See Hakala et al. 2019, p. 64.

330 Interview, 3 December 2021.

331 Fjäder 2021.

The level and depth of public–private cooperation in the Nordics vary depending on the country, sector[332] and specific supply or preparedness responsibility in question. It is also important to note that these partnerships come in many forms and shapes, extending from ad hoc consultations to specific contractual arrangements and obligations defined by law.

While dialogue with private companies is important in all the Nordics, in concrete terms, public–private partnerships arguably remain shallow. A particular problem pertains to the perceived lack of concrete incentives for the business community. The problem is exacerbated at the cross-border level. In a Nordic regional setting, there is an absence of both private-to-private and public–private platforms to exchange views and information on preparedness issues in a comprehensive manner.[333]

Finland, Norway and Sweden have bilateral agreements on economic co-operation to "ensure that the countries provide each other with vital goods and materials during international crises."[334] The agreement between Finland and Sweden stipulates that the normal trade between the two countries sets the basis for trade during a crisis. To the fullest extent possible, transactions should be carried out on agreed commercial terms. However, the specifics of how exactly the business community should be involved are nowhere defined. The new structural reform in Sweden will establish a national cross-sectoral commerce and business council for total defence and crisis preparedness. The aim of the council is to increase the level of knowledge in the council regarding cross-sectoral issues and different perspectives and conditions which apply for the state, as well as for commerce and business.

In 2019, the Presidium of the Nordic Council approved a societal security strategy, in which the role of the business community was identified in connection with the whole-of-society approach. The strategy states that the business community, along with municipalities and civil society, must have crisis awareness and a clear idea of how they can contribute to comprehensive security.[335] However, the strategy does not elaborate the ways in which the role of the third sector could be strengthened.

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332 In addition to looking at security of supply in a holistic manner, the topic can be examined using a sectoral approach. In the previous 2020 report on Nordic security of supply cooperation by Aula et al., six key sectors were identified: communications and digital networks, energy, food, financial infrastructure, pharmaceuticals, and transport.

333 Workshop, 7 April 2022.

334 Norway-Finland (2006): Avtale mellom Norge og Finland om opprettholdelse av vare- og tjenestebyttet i krigs- og krisesituasjoner; Finland-Sweden (1992): Sopimus Suomen ja Ruotsin välisestä taloudellisesta yhteistyöstä kansainvälisissä kriisitilanteissa; Sweden-Norway (1986): Protokoll om handel mellan Sverige och Norge i internationella krislägen.

335 Nordic Council of Ministers 2019.

PRIVATE SECTOR OPPORTUNITIES

Ideally, preparedness partnerships between the public and private sectors are forms of cooperation, in which the risks and benefits are shared between the parties. The general pull factors for companies to engage in preparedness partnerships revolve around money, information, brand image and market advantage.[336] For instance, in the Finnish preparedness discourse, improved access to information is often presented as a benefit for companies to incentivise their participation. Describing security of supply and preparedness partnerships as a way to safeguard business continuity in times of disruption and crisis has been used by Finnish authorities as a means to attract private sector participation.[337]

In a win-win situation, the public sector receives secured supply lines, while the company profits and gains references for the next bid. Such cooperation is best materialised through transparent and open public bidding and contracting processes. Companies might find it useful to record their preparedness partnerships to illustrate their social responsibility.[338] The positive image factor for companies should not be overlooked in the Nordic context as corporate responsibility is becoming increasingly important. According to some estimates, the Nordics are among global leaders in corporate social responsibility (CSR) and sustainability.[339]

Interviewees for this report stressed how private companies are often ahead of public authorities with regard to areas such as continuity planning and agility in responding to crises, and how this presents an opportunity for governments. The way many industries were able to rapidly adjust production amidst the Covid-19 pandemic represents an example of such agility in responding to global challenges.

Our interviewees also emphasised how the Nordic region may provide a favourable environment for public–private partnerships. As a largely borderless region, Norden provides an accessible market for Nordic enterprises. Faroese and Icelandic interlocutors pointed out how the disruptions to supply chains caused by the global pandemic have increased willingness to buy local products and invest in local food production. If the trend continues, it has the potential to strengthen local production and positively affect preparedness for the next crisis.

While crisis settings may distort the functioning of the economy, they may simultaneously provide an opportunity for developing public–private

336   As identified in the project. For more, see, for example, Fjäder 2021.

337   See, for example, National Emergency Supply Agency (n.d.d).

338   See, for example, Novo Nordisk 2020.

339   For more, see Strand et al. 2015.

collaboration, as illustrated by the Danish way of handling the Covid-19 crisis. Unprecedently, during the pandemic crisis, the business community was taken on board the state-driven crisis management structures (*Den nationale operative stab*, NOST). Interviewees for this report stressed how the business community's role was seen unproblematic, representing a type of win-win situation: the big companies invited to NOST would bring wealth and innovations to Danish society and at the same time, these companies gained a special place in the national crisis management structures. In the Finnish context, there were also media reports on how the business community used its networks in China to support the public effort of ensuring that there would be enough protective equipment in public hospitals at the beginning of the pandemic.

PRIVATE SECTOR CHALLENGES

The involvement of the private sector has raised questions concerning a level playing field and resources – how should the costs and the functions be shared if they are not based on competition? Interviewees in Sweden noted that private and public collaboration and roles must be regulated clearly when it comes to responsibilities, competition and compensation. However, taking heavy precautions for severe threats without any compensation does rarely make sense commercially, presenting a dilemma in this respect.[340]

The interviews conducted for this study also reminded how it has sometimes been challenging to get enterprises to commit to security of supply cooperation. This has especially been the case in relation to foreign-owned enterprises, which often lack a historical understanding and tradition of cooperation with the public sector. In some cases, cooperation is seen to mainly increase bureaucracy.[341] As a result, companies are sometimes unwilling to invest resources in preparedness cooperation.

Furthermore, multinational corporations prefer not to lock themselves in national cooperation because this would force them to replicate it in other markets. Hence, they rather work through multilateral institutions. In this sense, a Nordic-level framework would be more acceptable to them than dealing with each country individually.

The often small size of Nordic companies may be challenging for preparedness systems. In Norway, it was noted how small companies often lack resources for preparedness planning, and how they are therefore

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340   Interview, 3 December 2021.

341   Aaltola et al. 2016.

vulnerable to risks such as cyberattacks. This, in turn, may threaten the entire civil preparedness system especially in cases in which these private companies are responsible for operating critical functions.[342] In general, it was emphasised how there is a need for more top-down coordination between the public and private sectors with regard to situational awareness, systemic understanding of crisis management and training.[343]

At the same time, Norden also hosts several enterprises and industries with global operations. Their interests are not limited to Norden or even Europe. The involvement of large industries and global companies remains underexplored in the Nordic preparedness and security of supply context. This connects with the big "elephant in the room" – the role of the competitive element in some Nordic industries. Interviewees noted how competition has in some instances posed problems for the joint production of important supplies or other forms of collaboration.[344] This refers to the market neutrality principle vis-à-vis exceptions to the principle based on risk assessments and a shared view on risks. In general, the balance between national security and public control of investments in or ownership of critical infrastructure was raised in the discussions.[345]

The interviews brought up the possibility of joint acquisition and production of pharmaceuticals and for acute reasons: the Covid-19 pandemic illustrated once again how dependent the Nordics are on pharmaceutical products whose supply chains are both global and complex. The problems of critical dependencies, supply chains and the small Nordic markets have also been highlighted in previous security of supply studies.[346] Generally, the interviewees for this study did not seek to challenge or bring forward any new ideas with respect to pharmaceuticals; rather, they referred to suggestions already elaborated in earlier studies, such as the idea of joint acquisition and production of essential medicines in major crises. The *Critical Nordic Flows* report, for instance, has put forward several suggestions for how the Nordics could explore the potential for cooperation. One of the suggestions mentioned in our interviews was the idea to set up a joint Nordic pharmacy for rare medicines. The *Critical Nordic Flows* report has proposed that this pharmacy could involve a Nordic preparedness storage facility for critical medicinal products and devices. As a complementary proposition, one interviewee suggested that the

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342 Interview, 21 January 2022.

343 Interview, 14 January 2022.

344 Interview, 18 March 2022.

345 Interviews, 10 February 2022 and 18 February 2022

346 See, for example, Aula et al. 2021; Könberg 2014.

Nordics could have joint facilities in border areas, and the facilities could be located on both sides of the border.[347]

The issue of joint Nordic supply production is of course broader, and not only related to pharmaceuticals. One interviewee noted that joint procurement will not necessarily be enough in the future, and more thought should be put on joint production.[348] Another raised the possibility of joint stockpiling of critical items during wartime.[349] The interviewees reflected upon the following questions, among others:

- Which Nordic country would host the industry?
- Under what conditions could this happen?
- What would be the cost-sharing arrangement?
- Is there enough trust between the countries for the joint production, storing and delivery of critical products when the next crisis hits?

There were also some critical reflections regarding the potential of Nordic production: one interviewee noted that in the case of joint production of certain essential supplies such as medicines, it is important to look beyond the small Nordic region and explore European options, too.

The relatively large size of companies and industries can be a challenge. It was pointed out that in smaller Nordic communities, some industries have a lot of money and influence, and thus they can leverage this enhanced position in political decision-making.[350] The Finnish pool model, in which public-private cooperation takes place in larger groups, might provide an example of how to mitigate risks associated with some companies' and industries' excessive influence.

SINGLE MARKET CHALLENGE

The Nordics are all relatively small and open economies, highly reliant on well-functioning national and international markets. For them, a long-standing dilemma has been how measures to strengthen supply security may sometimes be at odds with open market principles.[351] The same dilemma has been seen to hamper the EU's efforts to take more comprehensive measures within the area of security of supply.

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347 Interview, 18 March 2022.

348 Interview, 7 February 2022.

349 Interview, 3 December 2022.

350 Interviews, 9 February 2022 and 27 January 2022.

351 Antola & Seppälä 2005, p. 1.

In 2000, the Finnish Government took the initiative to bring the topic of security of supply on the Union's agenda. Although the Commission prepared a report describing security of supply issues in light of the EU law, no concrete areas for cooperation nor legislative initiatives were put forward at the time.[352] Thus far, the EU has not developed a clear security of supply agenda.[353]

However, in the past few years, a change of attitude towards security of supply has taken place within the EU. Geoeconomic competition and the Covid-19 pandemic have increased the fragility of global value and supply chains. The risk of disruptions in critical economic flows has, in turn, heightened the importance of and challenges related to economic resilience within the Union.[354] Consequently, the EU has started to attach more weight on security of supply issues, exemplified by concepts such as open strategic autonomy and resilience.[355] The fear of interfering with the principles of market economy has been replaced by the fear of becoming a pawn in geoeconomic power politics. Nevertheless, the EU's approach to security of supply remains fragmented and divided across policy sectors.[356] For the Nordics, it provides an opportunity to be jointly proactive and try to influence the EU's security of supply approach as it is being formed, largely building on their long-standing traditions in this area together with the ability to work together as a block.

Certain problems emerged in this study concerning the development of public–private cooperation at the EU level. First, according to EU/EEA-wide competition laws, the companies involved should not gain a comparative advantage from the cooperation if the cooperation is not specifically contract-based. Second, participating in public–private cooperation should neither benefit the companies financially nor cause any losses. The single market rules on equal competition also mean that "national" companies cannot be favoured over foreign-owned ones, while they also stipulate rules on what sort of information can be shared, although some provisions on national security grounds provide exceptions.

Interviewees for this report suggested that the Nordics could further leverage their influence on regulation at the EU level in cases and sectors where joint Nordic interests are found. However, the common Nordic interest needs to be scoped and defined case by case against the backdrop that security of supply touches upon a plethora of sectors and is thus

352 Ibid.

353 Iso-Markku 2022.

354 Wigell et al. 2022.

355 Iso-Markku 2022.

356 Ibid.

operationalised under a wide array of regulation. Moreover, it should be noted that the Nordic business communities are also competitors. Therefore, full convergence of Nordic interests should not be expected when it comes to advancing and securing security of supply issues in all sectors. That said, all the Nordics have a common interest in any new EU regulation concerning security of supply that does not lead to undue protectionism that would damage the open economic basis of the Nordic countries.

As highlighted by Iso-Markku,[357] there is now a "turn" in the EU's thinking related to security of supply issues. This is exemplified by several Commission initiatives, such as the European Health Union, the directive on the resilience of critical entities and the Network and Information Security (NIS) Directive. The new EU Critical Entities Resilience (CER) Directive shifts the focus from protecting physical infrastructure to improving the resilience of critical providers of essential services. In the Nordics, the CER Directive, along with the general change in the geopolitical environment, has led to mapping exercises of vital and critical functions of society (see Chapter 5 on vital functions). The relevance and importance of well-functioning public–private cooperation is underscored by the fact that the vital or critical functions are operated or owned by private businesses.

The Commission's communication on the CER Directive notes that cross-border disruptions in Europe may not only hamper the smooth functioning of the internal market but may also negatively affect European businesses, along with citizens and governments. Moreover, the communication points out that core societal services are provided by tightly interconnected networks of European businesses. Hence, disruptions might have cascading effects from one business and economic sector to another. As also elaborated in the communication, ensuring business continuity is important to Europeans not only as consumers but also as citizens: disruptions to the supply of goods and services may also hamper public trust in governments. The maintenance of trust in each other and our societal functions is of particular importance in the Nordic region. Hence, ensuring the safety and functioning of Nordic societies through a whole-of-society approach that includes the private sector deserves the full attention of the Nordics.

357 Ibid.

COUNTRY PARTICULARITIES

Sweden provides an interesting and illustrative example of how the understanding of the involvement of the business sector has evolved over time. In its old total defence system, Sweden had a separate concept of **economic defence**.[358] On the basis of this concept, so-called *K-företag* (*krigsviktiga företag*) were defined. The term referred to companies that were critical for war efforts and played a central role in total defence planning, including security of supply.[359] Many preparedness functions were provided by public monopolies. For example, within the health sector, Apotek AB was responsible for the supply of medicines throughout the whole country. Since the monopoly was dismantled, no single actor has had national responsibility for medicine supply or coordination. The monopolies included the benefit that they did not have to compete and could therefore absorb the costs resulting from preparedness.

The Swedish system is now being rebuilt, but any return to monopolies is off the table. The industry responsibilities for preparedness must therefore be approached differently. The Swedish Government bill *Totalförsvaret 2021–2025* (*Total defence 2021–2025*) notes how "industry should be involved to an increasing extent" in the development of supply security, and how the government has launched various investigations into how to approach the issue, including how to modify the system that is currently being rebuilt. Herein, Sweden's comparatively large industries provide opportunities that smaller countries in the region may not have. Whereas small companies may lack the resources and incentives for continuity planning, it is a common practice in large companies. That is also why many large companies were quick in adjusting their supply chains when the pandemic hit, even more so than the government. Many Swedish companies also participated voluntarily in the crisis management, and an innovation hub was even put in place to address challenges brought on by the pandemic. Clearly, many Swedish companies appear to have the readiness to participate more actively in preparedness planning. Some Swedish companies have proposed preparedness hubs that will switch production to critical supplies in an emergency situation.[360]

In a recent report issued by the Swedish Defence Research Agency, the management of the pandemic brought new experiences and weaknesses to light in terms of private–public cooperation. The private sector is consistently noted as being vital for preparedness efforts, and involving the

358 Ingemarsdotter et al. 2018.

359 See Government of Sweden 2019.

360 Interview, 3 December 2021.

private sector is seen as a necessity. However, concrete plans for how this should be implemented still seem to be absent. There are, however, some sectoral private–public partnerships. Moreover, various investigations have been made and are underway into how the private sector should be involved in preparedness efforts. In May 2022, the Swedish Government announced the establishment of a business council for total defence and crisis preparedness – an advisory board with representatives from both the public and private sector. The cross-sectoral commerce and business council is a consultative, strategic-level forum in which the private business community and the public sector can exchange information on essential issues concerning total defence and crisis preparedness. The aim is to increase the level of knowledge in the council regarding cross-sectoral issues and different perspectives and conditions which apply for the state, as well as for commerce and business.[361]

In **Finland**, including **Åland**, the distinctive feature of the system is voluntary business participation in national efforts to ensure security of supply. The experiences gained during the Second World War and the models of operation established shortly after the war form the underpinnings of this collaboration. In an international perspective, such cooperation has been considered a strong point of the Finnish model.[362]

One of the most important elements in the Finnish model is that it effectively facilitates situational awareness: the pools of the National Emergency Supply Organisation (NESO) provide sectoral situational pictures from different fields of business, which, in turn, help to plan and manage the national-level security of supply operations. The organisation also functions the other way around: the NESO pool activities provide important benefits for the private actors involved in terms of networking, exchange of best practices and joint exercises, for instance. The NESO sectors and expert pools play a key role in the public-private cooperation. The sectors are industry-specific organisations that have representatives from both public authorities and business life. Equally, in Åland, the preparedness working groups include representatives from the authorities and the most central companies.

Certain strategic industries are required by law and regulations to ensure the continuity of their critical processes. However, private actors do not usually have a statutory duty to undertake measures such as preparedness plans to guarantee the continuity of their critical operations amidst disruptions and emergencies. Instead, the continuity management activities undertaken by enterprises are determined by business

361 Written comments, 3 June 2022; Government of Sweden 2022b.

362 Hakala et al. 2019.

requirements, contractual obligations towards customers and enterprises' own risk management activities.[363]

In **Norway**, the role of the private sector in civil preparedness is defined by the 2011 Act on Business and Industry Preparedness.[364] It particularly addresses security of supply and assigns priorities to goods and services through a collaboration between public and private actors. According to the act, business operators are required, among other things, to deliver or produce goods and services for particular purposes, surrender property for temporary use and cooperate with public authorities to find effective solutions in situations in which the needs of the population, armed forces and society overall so require. In case of a demand shock, supply shortage or logistical failure, such arrangements would take effect by way of a special measures order issued by the government through royal decrees. Otherwise, private sector actors are also required to participate in the planning and implementation of crisis management exercises and in preparedness activities overall. In addition, the act obliges local and regional authorities to assist private actors in the planning, preparation and implementation of preparedness activities.

Because of its geographical location, **Denmark** is better connected to the rest of Europe than the other Nordics are through roads and seaports. In general, Denmark ranks the ninth best connected country in the world.[365] These features bear relevance to Danish security of supply and preparedness work since they make Denmark naturally less isolated and therefore less vulnerable to supply disruptions. Issues such as stockpiling and indigenous production of critical goods have been of less relevance. Instead, Denmark has focused on diversifying its trade links and doing business globally.

However, as the threat of supply disruptions has gained prominence following the Covid-19 pandemic and increased geoeconomic competition, there is a renewed focus on security of supply in Denmark as well. Economic diplomacy is among the five priority areas in the current government's foreign and security policy strategy.[366] The challenges mentioned in the strategy include those posed by disruptions in the global supply chains and labour shortages. It also notes that the international economy is in a state of flux and calls for "strong public–private

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363 National Emergency Supply Agency (n.d.d).

364 Ministry of Trade, Industry and Fisheries of Norway 2011.

365 Altman & Bastian 2020.

366 Ministry for Foreign Affairs of Denmark (n.d.b).

cooperation on developing the solutions that the world needs, and that are robust with regard to future shocks."[367]

As stipulated in the Danish Emergency Management Act, particularly in its Section 8, ministers may order private companies and institutions to provide assistance in the planning or execution of tasks related to emergency preparedness. Moreover, private companies and institutions can be requested to take special measures regarding goods, services, means of production, etc. within their normal business if this is required for the performance of emergency tasks.[368]

Public–private partnerships took different forms and shapes at the height of the Covid-19 pandemic, which constituted a major test for public–private cooperation across the globe. Major companies were invited to national crisis management structures: Maersk provided an air bridge to safeguard the shipment of face masks from China to Denmark and Sweden,[369] and companies were also "chipping in" by donating funds to Covid-19-related public sector activities, for example.[370]

As a small island state with an open market economy, **Iceland** is exposed to the risk of supply disruptions. Its capacities for national production and stockpiling are limited. This places extra importance on public–private partnerships in all areas of supply security. According to Article 8 of the Icelandic Civil Protection Act, "the National Commissioner of Police may enter into contracts with private institutions, non-governmental organizations or other parties under which these shall attend to the implementation of specific aspects of civil protection measures. Contracts providing for implementation of civil protection measures by third parties under this Article shall be subject to the approval of the Minister of Justice."[371]

In critically important sectors such as telecommunications, companies may be owned by the state. In other areas such as food supplies, private enterprises manage the day-to-day operations. The European Economic Area rules and Iceland's own legislative framework have caused certain problems for public–private cooperation because in some areas, direct cooperation between companies without the involvement of the public sector may be forbidden by competition law.

There are some efforts at stockpiling. This involves, in particular, medical equipment such as masks, but not other critical resources such as food

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367 Ibid.

368 Retsinformation.dk (n.d.).

369 Maersk Drilling (n.d.).

370 See, for example, Novo Nordisk 2020, p. 11–15.

371 Government of Iceland 2017.

and oil, partially due to limited storage capacity. Traditionally, stockpiling has been regarded as too expensive, but this is currently being revisited, including the economic incentives for these efforts.

CONCLUSION

Most Nordics operate under the EU/EEA regulatory frame, and the EU sets both challenges and opportunities for developing public–private cooperation in the area of security of supply. The EU offers a forum for the Nordics to leverage their common interest and know-how. Still, the EU regulatory frame sets certain limits for public–private collaboration through competition law, for example. The regulatory frame is not, however, static but constantly in flux and subject to change. The new "turn" in the EU's security of supply thinking might offer new space and opportunities. In the area of security of supply, too, influencing the EU regulatory framework jointly as Nordics and taking common positions in relevant international forums remain a valid strategy for the Nordic countries. Yet, this approach should come with the realisation that the Nordics do not necessarily always "play in the same team", and that their industries and business communities might instead be competitors in certain areas.

Public–private cooperation is essential for all Nordic societies since core societal functions and services are often operated by private businesses and companies. The third sector is instrumental in maintaining and strengthening the Nordic trademark, trust in public authorities, as it is essentially the responsibility of the public sector to guarantee that societies indeed work. As highlighted in the 2019 *Nordic Council Strategy on Societal Security,*[372] trust in public authorities is part of the "Nordic gold" that needs to be protected. Disruptions in goods and service flows might shake this societal trust in unprecedented ways and also affect the environment for doing business. In this respect, governments need the business sector, and the business sector needs governments. Assessing the Nordic and sector-specific needs requires constant dialogue and attention, especially if the goal is to develop Nordic public–private cooperation in the area of security of supply.

Within the Nordic region, a more in-depth study should be commissioned to explore how the public–private dialogue could be strengthened in security of supply sensitive areas through harmonising regulatory and policy frames. The Nordics could establish a Nordic business network for security of supply specific cooperation and sharing of experiences. The

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372 Nordic Council 2019.

network would enable the exchange of information and best practices. Moreover, it could also be instrumental in identifying gaps in public–private cooperation in different country contexts and, more broadly, in the Nordic region as a whole.

6 COLLABORATIVE FRAMEWORKS

The Nordics already have well-functioning regional and bilateral structures and formats for security of supply and preparedness cooperation. This cooperation takes place in a variety of formal and informal settings and includes a plethora of arrangements covering bilateral, multilateral and regional agreements and forums both within and beyond the Nordics. These include broader inter-parliamentary and governmental cooperation forums within the Nordic Council and Nordic Council of Ministers respectively, as well as other more specific forums such as the Haga ministerial meetings on public safety and preparedness, the Svalbard Group for public health preparedness and the Emergency Prevention, Preparedness and Response (EPPR) working group under the Arctic Council.

The Nordics also conduct international preparedness cooperation in broader international settings, in which the main international institutions that frame national security of supply and preparedness activities are the European Union (EU) and the North Atlantic Treaty Organization (NATO). The EU is the scene-setter for a variety of regulations related to resilience and preparedness and hosts important forums for civil protection. The EU has previously adopted measures concerning oil stockpiling, and it presently emphasises strong resilience measures such as the new CER Directive. NATO also plays a key role in civil–military, crisis preparedness and resilience activities as well as wartime security of supply.

EUROPEAN UNION

The EU is the main regulatory frame for the Nordics. Denmark was the first Nordic country to enter the European Economic Community in 1973.[373] Sweden and Finland, including Åland, followed suit in 1995. Norway and Iceland have decided to remain associated partners of the EU through their respective European Economic Area (EEA) memberships. Norway and Iceland are also part of the Schengen area. Greenland and the Faroe Islands are not part of the EU, yet they remain tied to it through different agreements and arrangements. When Denmark joined the EU, the Faroe Islands opted to remain out but has signed a fisheries and a free trade agreement (FTA) with the EU.[374] Greenland, in turn, is a so-called EU overseas country and territory (OCT) and receives approximately EUR 30 million from the EU annually.[375]

The EU is an important security community, especially for Sweden and Finland. The **Swedish** Government bill on total defence for 2021–2025 states that Sweden's EU membership "constitutes the most important platform for [its] unilateral declaration of solidarity and solidarity-based security policy."[376] In **Finland**, the *Government Report on EU Policy* states that "the Union should be a strong security community. The common security and defence policy, responses to hybrid influencing, such as cyber attacks, as well as to international crime and other cross-border security threats, the security of supply and other promotion of the Union's internal and external security are interlinked, creating a basis for strengthening the security of citizens comprehensively."[377]

Although a long-standing EU member, **Denmark** has had reservations about developing the EU in hard security and defence matters. The Common Security and Defence Policy (CSDP) is one of the four areas of the EU from which Denmark has had an opt-out since 1993. The current security situation in Europe, and the war in Ukraine in particular, have led Denmark to re-evaluate the importance of the EU frame. As a result, the government decided to hold a referendum on joining the CSDP in June 2022.[378] The referendum resulted in a "yes" vote to join the CSDP.

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373   Greenland left it in 1986.

374   Government of the Faroe Islands (n.d.c).

375   European Commission (n.d.g).

376   Government of Sweden 2020, p. 9.

377   Government of Finland 2021b, p. 9.

378   Written comments, 16 March 2022; see also Government of Denmark 2022.

The EU's security of supply efforts have previously been characterised as both "haphazard and siloed".[379] However, the Union is now increasingly attaching more weight on many security of supply related issues.[380] The critical turn in the EU's thinking about security of supply occurred amidst negative international and global trends, and as a response to changes in the EU's immediate security environment due to the Covid-19 pandemic and Russia's invasion of Ukraine. Simultaneously, we have witnessed a conceptual turn as the EU has also introduced the concepts of resilience and strategic autonomy in its strategic planning and thinking.[381]

Although security of supply issues are not within the scope of EU legislation, the Union's activities have direct impacts on continuity management and crisis preparedness through the internal market, common currency, solidarity actions and various sectors of common policy and related legislation. In the Finnish context, for example, it has been noted that the Union's activities regarding hybrid and cyber threats or strategic autonomy have notable relevance.[382] The EU's internal market is also vital for many private sector actors.

The EU frame is also considered to have importance for security of supply in a narrower, material sense. In certain sectors, EU membership brings concrete requirements to uphold preparedness. For example, the requirements for crude oil or petroleum products are outlined in the EU's Oils Stocks Directive.[383] Other examples include the European Programme for Critical Infrastructure Protection (EPCIP) and the EU's civil protection law of 2014. The Union's Civil Protection Mechanism (EUCPM)[384] obliges the participating states (also non-EU) to develop periodical national risk assessments.[385]

Tackling critical dependencies has become an important topic for the EU, which was noted throughout our interviews across the Nordics, and many interviewees were expecting the forthcoming EU Directive on the resilience of critical entities (CER Directive)[386] to enter into force.[387] The CER Directive will replace the 2008 European Critical Infrastructure (ECI)

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379   Iso-Markku 2022, p. 3.

380   Ibid.

381   Ibid.

382   Ibid.

383   European Union 2019.

384   European Commission (n.d.f).

385   Poljansek et al. 2019.

386   European Commission 2020b.

387   Workshop, 7 April 2022.

Directive,[388] and it will be important at least in two different respects: (1) it will expand the scope of the previous directive in the area of cybersecurity, and (2) it entails a shift of focus from physical infrastructure protection towards improving the resilience of critical providers of essential services. With respect to the latter, substantial new obligations are to be expected for the member states.

Civil protection cooperation within the EU is extensive. Besides the Nordic EU member states, both **Iceland** and **Norway** participate in it mainly through their respective European Economic Area (EEA) agreements. Iceland has participated in the EU's Civil Protection Mechanism (EUCPM) since 2001 and Norway since 2002. The EUCPM aims to strengthen cooperation to improve disaster prevention, preparedness and response. Through their partnerships with the EUCPM, Norway and Iceland have access to disaster and civil preparedness capabilities as well as a financial support scheme for adjustment costs.[389] The partnership also involves expert training, exercises and individual preparedness projects.

388 COUNCIL DIRECTIVE 2008/114/EC

389 Ministry of Defence & Ministry of Justice and Public Security of Norway 2018.

Table 3: List of relevant EU legislation and initiatives.

List of relevant EU legislation and initiatives	Area
Critical infrastructure protection[i]	
Directive on European Critical Infrastructures[ii] Directive 2008/114 (subject to update 2022/CER)	Establishes a procedure for identifying and designating European critical infrastructures in the transport and energy sectors that, were they to be disrupted or destroyed, would have significant cross–border impact[iii]
European Programme for Critical Infrastructure Protection (EPCIP)	Set of measures to improve the protection of critical infrastructure
EU initiative on Critical Information Infrastructure (CIIP)	Strengthens the security and resilience of vital ICT infrastructures
European Reference Network for Critical Infrastructure Protection (ERNCIP)	Technical support for the review of the Directive on European Critical Infrastructures
Directive (EU) 2016/1148	Measures for a high common level of security of network and information systems across the Union
Civil protection	
EU law on civil protection Regulation 2021/836[iv]	Facilitates coordination in civil protection to improve the Union's response to natural and man–made disasters
European reserve of resources (the rescEU reserve)[v]	European reserve of resources, which includes a fleet of firefighting planes and helicopters, medical evacuation planes and a stockpile of medical items and field hospitals that can respond to health emergencies
Decision No 1313/2013 on a Union Civil Protection Mechanism	National risk assessment for disaster risk management
Decision (EU) 2019/420 on the adoption of rescEU	The purpose of rescEU is to reinforce and strengthen components of the EU's disaster risk management
Security of supply	
EU's Oil Stocks Directive 2009/119/EC[vi]	Requirements for crude oil and petroleum products
Regulation (EU) 2017/1938	Measures to safeguard the security of gas supply

i   European Commission n.d.a.
ii   Council of the European Union 2008.
iii   European Commission website n.d.b.
iv   European Parliament and Council of the European Union 2021.
v   European Commission n.d.c.
vi   See for example European Commission website n.d.d.

NORTH ATLANTIC TREATY ORGANIZATION (NATO)

NATO membership is the cornerstone of the foreign, security and defence policies in Denmark, Iceland and Norway – and, in all likelihood, in Sweden and Finland as well in the near future. Already now, NATO plays an important role in civil preparedness planning in all the Nordics. For Iceland, all cooperation with NATO is "civil" in the sense that Iceland has no armed forces.[390]

NATO has established seven baseline requirements for national resilience, which are significant in terms of security of supply and civil preparedness. The requirements were adopted at the NATO Summit in Warsaw in July 2016[391] and are:

1	Assured continuity of government and critical government services: for instance, the ability to make, communicate and enforce decisions in a crisis;
2	Resilient energy supplies: back-up plans and power grids, internally and across borders;
3	Ability to deal effectively with uncontrolled movement of people, and to de-conflict these movements from NATO's military deployments;
4	Resilient food and water resources: ensuring these supplies are safe from disruption or sabotage;
5	Ability to deal with mass casualties: ensuring that civilian health systems can cope and that sufficient medical supplies are stocked and secure;
6	Resilient civil communications systems: ensuring that telecommunications and cyber networks function even under crisis conditions, with sufficient back-up capacity. This requirement was updated in November 2019 by NATO Defence Ministers, who stressed the need for reliable communications systems including 5G, robust options to restore these systems, priority access to national authorities in times of crisis and thorough assessments of all risks to communications systems;
7	Resilient transport systems: ensuring that NATO forces can move across Alliance territory rapidly and that civilian services can rely on transport networks, even in a crisis.

Source: NATO 2022.

390 Interviews, 17 February 2022 and 1 February 2022.

391 See NATO 2016.

In June 2021, these commitments were renewed and strengthened by the heads of state of the Alliance.[392] According to the Strengthened Resilience Commitment, "resilience is a national responsibility and a collective commitment. NATO's baseline requirements for national resilience, which we keep updated to reflect emerging challenges and priorities, provide a comprehensive framework to support the effective enablement of our armed forces and of NATO's three core tasks of collective defense, crisis management and cooperative security."[393] In the NATO context, resilience is included Article 3 of the Alliance's founding treaty. It states that "in order more effectively to achieve the objectives of this Treaty, the Parties, separately and jointly, by means of continuous and effective self-help and mutual aid, will maintain and develop their individual and collective capacity to resist armed attack."[394]

Norway has actively promoted the approach of defining and strengthening critical societal functions within NATO.[395] In Norway, a cross-sectoral programme has been set up under the Ministry of Justice and Public Security to ensure the further development of total defence and the robustness of critical societal functions.[396] NATO's baseline requirements can be seen as complementary to Norway's own work on critical societal functions, and they provide the added value of unifying the resilience and preparedness systems of different countries.[397] Meanwhile, NATO's influence is also visible in Norway's national emergency preparedness and response system, which is based on NATO's Crisis Response System (NCRS).

NATO cooperation is also important for **Finland** and **Sweden**. The countries are close partners with NATO, holding the status of Enhanced Opportunities Partners (EOP) since 2014. Both conduct crisis preparedness cooperation with NATO's structures. Sweden and Finland have also actively participated in NATO meetings on resilience,[398] and their active participation in NATO's work on preparedness has been highly appreciated. Their NATO cooperation enables the development of dialogue both within the defence sector and between crisis preparedness actors.[399]

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392 NATO 2021c.

393 Ibid.

394 NATO 2021a.

395 Ministry of Justice and Public Security of Norway 2016.

396 Ministry of Defence & Ministry of Justice and Public Security of Norway 2018.

397 Interview, 30 November 2021.

398 Interview, 19 November 2021.

399 For Sweden, see Government of Sweden 2021a.

Sweden has assessed the seven baseline requirements against the context of energy supply,[400] and they are also central in its work on civil defence.[401] In the future, Sweden might also look into the criteria that NATO has developed as part of its civil preparedness activities.[402] The cooperation in the NATO context has also been highly valued in Finland because it has provided opportunities for international networking and information exchange in this critical sector. If Finland will be accepted as a NATO member, issues related to civil preparedness will be a natural sector to contribute to and influence the future development of the Alliance, given that Finland has a long tradition of civil preparedness planning as part of its comprehensive security model.

NORDIC COOPERATION AND AGREEMENTS

As the common security environment has deteriorated in recent years, Nordic defence cooperation has become increasingly extensive. In addition to bi- and trilateral arrangements, the main cooperation format within the Nordics is NORDEFCO, an acronym for the Nordic Defence Cooperation. In the civil preparedness sector, Nordic cooperation takes place in a network of regional, trilateral, and bilateral agreements and formats. The Nordic Prime Ministers' joint statement of 3 November 2021 on deepening cooperation in the field of security of supply and preparedness states that Nordic cooperation is "extensive in many areas that support building more resilient and secure societies."[403] In this regard, the statement underscores the importance of the Nordic Council of Ministers, the Haga cooperation (civil preparedness and rescue services), NORDEFCO (defence) and the Svalbard Group (health preparedness).

The Haga cooperation on civil protection involves active cooperation between the authorities responsible for public safety, rescue and preparedness at both technical and political levels. One of its aims is to reinforce public safety and preparedness within Nordic societies by developing new forms of cooperation that improve society's resilience in the event of crises, accidents and disasters.[404] The work under the Haga format was much appreciated by our interviewees. In its meeting on 14 December 2021, the Haga cooperation ministers responsible for civil preparedness

400 Jonsson & Veibäck 2020.

401 Government of Sweden 2021a.

402 Interview, 3 December 2021.

403 Ministry for Foreign Affairs of Finland 2021.

404 Ministry of the Interior of Finland (n.d.).

from Denmark, Sweden, Norway, Iceland and Finland identified and agreed on three development goals for 2022–2024. The aim is to discuss 1) the implementation of the lessons learned from the management of the Covid-19 pandemic in civil preparedness, 2) issues related to climate change and 3) issues related to Host Nation Support.[405]

According to the interviews and input from the NOSAD workshop on 7 April 2022, the cooperation within the Haga format has been considered to function very well at all levels (ministers, ministerial group, directors-general, other working groups). The Haga cooperation was also regarded as the primary framework in which further cooperation on Nordic preparedness should take place. The recently introduced NORDEFCO–Haga cooperation was generally welcomed and appreciated, and the goal to deepen this cooperation was also endorsed.[406] While there were some critical voices about NORDEFCO, many interviewees perceived it to function well, and some suggested the need to increase NORDEFCO–Haga cooperation through mutual exercises and cooperation on chemical, biological, radiological and nuclear (CBRN) issues, for example. NORDEFCO was also mentioned as an example of how to develop the civilian side of preparedness in the future.

Nonetheless, some interviewees saw that concrete cooperation on civil preparedness issues has remained relatively weak among the Nordic countries. Outside the agencies directly dealing with preparedness, Nordic cooperation was perceived to be less established. The views on how to increase cooperation varied. Some suggested more formal, binding agreements, which would also have the necessary political mandate to enable cooperation in the first place. Others noted that there is no need for further formal structures, and that such structures might require more resources, which is why increased cooperation should rely more on informal formats of cooperation.[407] While cooperation takes place on a voluntary basis, finding the appropriate balance between the two perspectives may be a challenge going forward.

Regarding security of supply, the **Finnish** NESA's cooperation with its **Swedish** and **Norwegian** counterparts (MSB, DSB) has gradually intensified, and general discussions about the need to enhance Nordic cooperation have become increasingly frequent. The cooperation and exchange of information between the Nordic civil preparedness organisations were described as relatively fluent, especially between the NESA, MSB and DSB. The agencies have established lines of communication and can easily share

405 Interview, 6 April 2022; Ministry of the Interior of Finland 2021.

406 Interviews, 3 December 2021.

407 Interview, 22 December 2021; workshop, 7 April 2022.

non-classified information both at the operative and management levels. Similar dialogue has also taken place in security of supply issues. These were perceived as highly useful during the evolution of the Covid-19 pandemic, for example.[408] The participation of **Iceland** and **Denmark** has been less systematic since they lack similar organisational structures. Yet, building on the current formats and structures, security of supply presents an additional area in which both countries welcome Nordic sharing of information and best practises.

In terms of concrete Nordic responses or efforts, our interviewees put forward a number of practical proposals, such as common Nordic storage facilities that would function as hubs for the supply of protective equipment or other critical components or materials.[409] On the other hand, having one country specialising in one function and another country in another might provide a burden-sharing option. Shared stockpile facilities located in border areas were also mentioned as a solution to mitigate the risk that a particular host country might limit the use and distribution of goods in case of an emergency. It was, however, recognised that such facilities might not have sufficient physical capacity to cover the needs of all the Nordics, and that centralised stocks would not necessarily be wise in wartime.[410] Apart from Finland, it was not perceived realistic that the other countries would base their systems on significant stockpiling since this would be economically too costly at the Nordic level as well.

Our interviewees did, however, note that there might be added value in procuring or working together within the EU framework, particularly to enhance the Nordic view and promote the Nordic model for other European countries. The idea of virtual stockpiling, which would create the needed market effect, was also brought forward in our project workshop. The interviewed experts pointed out that the countries could have access to a wider array or products, services and infrastructure if they acted together, pooled resources or did joint procurements. Through joint action, the Nordic countries could also have more bargaining power globally.[411] Some raised the issue of raw materials. Others floated the idea of increasing resilience in manufacturing by establishing facilities in the Nordics or moving production closer, for example. Even though this would likely entail higher production costs, the supply lines would be less easily disrupted.[412]

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408 Interview, 29 November 2021.

409 Interview, 21 January 2022.

410 Interview, 3 December 2021.

411 Interview, 30 November 2021.

412 Interviews, 21 January 2022, 18 February 2022 and 30 November 2021.

Some of the interviewees argued that Nordic cooperation is held back by the lack of a clear joint institutional structure for civil preparedness. One way to overcome the divergence of the systems would be to establish a Nordic secretariat or a similar entity to coordinate and facilitate cooperation on civil preparedness activities. This could also serve as a means to mobilise financing and other resources specifically for Nordic initiatives[413] and would therefore not be tied to chairmanships. Another option would be a Nordic framework agreement on civil preparedness or security of supply issues.[414] In addition, science parks were also mentioned, which could be used to discover innovative solutions and launch pilot projects for various initiatives.[415] Other suggestions included an expert pool to bring together experts from different sectors, or to focus on sectors in which expertise is limited. It was also suggested that universities could be better included in Nordic cooperation.

Other factors that may hinder the development of Nordic cooperation were also identified. Even between Norway, Finland and Sweden, inter-agency cooperation has not been institutionalised, and it therefore mostly depends on the individuals involved and may lack continuity. This also hampers the realisation of ideas that have been put forward, such as the establishment of a forum for expert exchange and joint exercises.[416] Moreover, interviewees raised legitimate questions about the authority of key preparedness authorities. For example, in Sweden, preparedness activities are highly decentralised, and one of the highest national authorities, MSB, does not have a mandate for Nordic cooperation or taking decisions on behalf of other authorities.

The fact that there are inconsistencies and weaknesses in the coordination of the national systems may be equally problematic for Nordic cooperation.[417] It was also pointed out that despite the similarities between the Nordic countries, there also are undeniable differences between their economic, political and security policy interests, reflected, for example, in their varied participation in international alliances – a problem that may be better tackled in the future if Finland and Sweden are accepted as NATO members.[418] Although these underlying points of view are unlikely to prevent any of the countries from participating in Nordic cooperation

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413   Interview, 29 November 2021.

414   Interview, 30 November 2021.

415   Interviews, 3 December 2021 and 21 January 2022.

416   Interview, 29 November 2021.

417   Interview, 30 November 2021.

418   Interview, 30 November 2021.

as such, they might affect their level of interest or their motivation to work together on certain issues.

Although Nordic cooperation works well in many respects, it does not always function as expected. Some of the interviewees pointed out that high-level political declarations do not always entirely correspond to the reality of practical work.[419] Therefore, cooperation cannot be brought about merely through political statements. Instead, it requires structures, resources and long-term commitment involving the operational level.

The Covid-19 pandemic is the recent event that created a rupture in the perception of well-functioning and reliable Nordic cooperation – most notably, this was brought about by the closure of borders and introduction of border controls, which considerably impeded daily interactions.[420] The lack of established procedures and shared approaches resulted in difficulties in communication, which led to one-sided action and caused some friction in the Nordic relations.[421] However, the problems in communication were not perceived as issues that blocked or prevented cooperation. Our interviewees nevertheless mentioned the improvement of communication and information exchange among the Nordics during crises as a particularly important factor.

As one interviewee pointed out, the level of trust may be adversely affected by crises, which also seems to be the case with the current Covid-19 pandemic. Against this background, the trust that was diminished by unilateral actions during the pandemic was viewed as an important element that needs to be restored. Indeed, reliable cooperation on preparedness cannot be built if the expectation is that each country will only look out for its own national interests when a crisis occurs.[422] According to our interviewees, the apparent shortcomings of Nordic cooperation during the pandemic may have eroded the countries' willingness to seek regional solutions.

It is therefore important to also try to strengthen public trust in Nordic cooperation to maintain resilience in the face of future crises.[423] Finland and Sweden's cooperation during the NATO application process and the other Nordic NATO members' strong support constitute an encouraging example. Nordic cooperation also played a positive role during the pandemic, as also noted in the interviews. For example, Sweden was able to bring the non-EU countries Norway and Iceland under the EU's

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419 Interview, 29 November 2021.

420 Several interviews. This has also been reflected in a previous study by Creutz et al. 2021.

421 For example, Swedes commute to both Norway and Denmark for work. They were therefore impacted when borders were closed during the pandemic. Norway also relies on Swedish workforce.

422 Interviews, 30 November 2021.

423 Interview, 14 January 2022.

joint procurement of vaccines. The Covid-19 crisis has also functioned as an eye-opener and awareness-raiser. In the Danish context, it was mentioned that the importance of Nordic cooperation is now recognised better than before the pandemic.

Table 4: List of relevant declarations, agreements and forums.

Agreements and formats	Nordic participants	Policy area
Nordic Group for Public Health Preparedness (the Svalbard Group)[i]	Denmark, Finland, Iceland, Norway, Sweden, Faroe Islands, Greenland, Åland	Health
Nordic Group for Healthcare Personnel[ii]	Denmark, Finland, Iceland, Norway, Sweden	Health
Memorandum of Understanding establishing the Nordic Defence Cooperation (NORDEFCO)	Denmark, Finland, Norway, Sweden	Defence
Agreement on Cooperation in the Defence Materiel Area[iii]	Denmark, Finland, Norway, Sweden	Defence
Statement of Intent on Enhanced Operational Cooperation among the Ministries of Defence of Denmark, Norway and Sweden[iv]	Denmark, Norway, Sweden	Defence
Statement of Intent on Enhanced Operational Cooperation among the Ministries of Defence of Finland, Norway and Sweden[v]	Finland, Norway, Sweden	Defence
Haga Declarations, 2009 and 2013[vi]	Denmark, Finland, Iceland, Norway, Sweden	Civil protection and preparedness
Haga: Nordic Director Generals' meetings	Nordic counterparts in civil protection and preparedness	Civil protection and preparedness
Copenhagen Declaration 2020 on Nordic civil protection cooperation in the light of climate change and increasingly extreme weather	Between the director generals of the operational authorities	Civil protection and preparedness
Københavnskonklusionerne 2020[vii]	Denmark, Finland, Iceland, Norway, Sweden	Civil protection and preparedness
Helsingforskonklusionerne 2021[viii]	Denmark, Finland, Iceland, Norway, Sweden	Civil protection and preparedness
Haga–NORDEFCO working group (formed from the Haga–agreement Helsingsforskonklusioner 2021)	Denmark, Finland, Iceland, Norway, Sweden	Civil–military CIMIC
General Security Agreement on the Mutual Protection and Exchange of Classified Information between Denmark, Finland, Iceland, Norway and Sweden[ix]	Denmark, Finland, Iceland, Norway, Sweden	Information security
Hanaholmen Initiative[x]	Sweden, Finland	Crisis preparedness

i   Nordic Council of Ministers n.d.
ii Valvira 2021.
iii Denmark, Finland, Norway, Sweden (2015). Agreement between the Governments of Denmark, Finland, Norway and Sweden concerning cooperation in the defence materiel area.
iv Government of Sweden 2021b.
v   Swedish Ministry of Defence 2021.
vi Swedish Civil Contingencies Agency 2020.
vii Danish Ministry of Defence 2020.
viii Finnish Ministry of the Interior 2021.
ix Swedish Ministry for Foreign Affairs 2013.
x   Hanaholmen n.d.

Memorandum of Understanding in the transport sector	Sweden, Finland	Transport
Exchange of goods and services in the event of crises[xi]	Finland, Norway	Economic cooperation, joint preparedness measures
Exchange of goods and services in the event of crises[xii]	Finland, Sweden	Economic cooperation, joint preparedness measures
Exchange of goods and services in the event of crises[xiii]	Norway, Sweden	Economic cooperation, joint preparedness measures
Arctic Search and Rescue Agreement	Denmark, Finland, Norway, Faroe Islands, Greenland, Sweden	Rescue
West Nordic Cooperation on Air Ambulance Services[xiv]	Greenland, Iceland and the Faroe Islands	Rescue
NORDRED: Nordic cooperation between rescue services	Denmark, Faroe Islands, Finland, Greenland, Norway, Iceland, Sweden, Åland	Rescue
Barents Rescue: Agreement on Cooperation within the Field of Emergency Prevention, Preparedness and Response in the Barents Region[xv]	Finland, Norway, Sweden	Rescue
Arctic Council	Denmark, Faroe Islands, Finland, Greenland, Iceland, Norway, Sweden, Åland	Intergovernmental cooperation
Arctic Council working group on Emergency Prevention, Preparedness and Response (EPPR)	Denmark, Faroe Islands, Finland, Greenland, Iceland, Norway, Sweden, Åland	Emergency prevention, preparedness and response
Nordic Atlantic Cooperation (NORA) under the auspices of the Nordic Council of Ministers[xvi]	Faroe Islands, Greenland, Iceland, coastal Norway	Regional cooperation
Virve–Rakel, Rakel–Nødnett, Virve–Nødnett roaming	Finland, Norway, Sweden, Åland	Communication
Copenhagen Agreement: Nordic cooperation on combating marine pollution through oil or other harmful substances	Denmark, Faroe Islands, Finland, Greenland, Iceland, Norway, Sweden, Åland	Environment
Nordic executive course (Haga)		Crisis preparedness
NordBER, a platform specifically built to address preparedness issues in the Nordic energy sector		Energy
Nord Pool arrangement on the common electricity market owned by the Nordic and the Baltic countries' transmission system operators	Denmark, Faroe Islands, Finland, Greenland, Iceland, Norway, Sweden, Åland	Energy

xi   Norway-Finland (2006): Avtale mellom Norge og Finland om opprettholdelse av vare- og tjenestebyttet i krigs- og krisesituasjoner. HE 41/2006 Laki Suomen ja Norjan välillä tavaroiden ja palvelujen vaihdon ylläpitämisestä sota- ja kriisitilanteissa tehdyn sopimuksen lainsäädännön alaan kuuluvien määräysten voimaansaattamisesta.
xii   Finland-Sweden (1992): Sopimus Suomen ja Ruotsin välisestä taloudellisesta yhteistyöstä kansainvälisissä kriisitilanteissa
xiii Sweden-Norway (1986): Protokoll om handel mellan Sverige och Norge i internationella krislägen
xiv   Gunnarsson et al. 2015.
xv   Barents Euro-Arctic Council n.d.
xvi   Nordic Atlantic Cooperation n.d.

Other non–Nordic agencies and programmes		
Members of the International Energy Agency (IEA)	Finland, Norway, Sweden	Energy
OECD´s International Energy Programme	Denmark, Finland, Sweden	Energy
Membership of the ACOMES group where representatives of the stockholding agencies and organisations holding emergency oil stocks meet annually		Energy
NATO Petroleum Committee (senior advisory body in NATO for logistic support to Alliance forces on all matters concerning petroleum)		Energy

KEY ELEMENTS OF ENHANCED COOPERATION

According to our interviewees, there is a broad and strong willingness across the Nordics to increase Nordic cooperation. Further cooperation could be built on the countries' similarities (small open economies, similar societal systems, welfare state models) and shared values. One important similarity is the relatively high level of trust in government, which can be seen as a valuable asset to societal resilience in each country.

Yet, it was noted that without a concrete set of priorities both at the national and Nordic levels, the work on preparedness might be organised sub-optimally and only based on urgent needs. At the same time, the interviews indicated divergent views on how and on what basis the Nordics should deepen their security of supply cooperation. Some linked the improvement of cooperation to legal obligations, agreements and clear national mandates, while others considered it important not to make the cooperation too formalised.[424]

It was also highlighted in our interviews that operational and technical staff should be consulted before or in conjunction with high-level decision-making on new projects and objectives. The views of experts who work on practical preparedness issues should be heard for at least three reasons: first, to avoid broadening the gap between the two levels (political vs practical); secondly, to avoid raising any false expectations regarding the results; and thirdly, to make sure that administrations, especially in smaller countries and regions, are not overburdened. For small countries with limited human resources, tall orders which do not consider the country-specific capacities should be avoided.

As said, Nordic values are at the core of further cooperation now and in the future. Nordic cooperation was perceived to work well in times of

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424   For example, an agreement format that aims to ensure the continuity of trade overall rather than pinpointing specific products or amounts is favoured in Norway as a preferable model for similar arrangements with other countries.

normalcy or in small-scale crises (in which only one or two countries need help). The key, however, is to ensure that Nordic cooperation also functions in times of crises. This is the ultimate stress test for the functioning of Nordic cooperation.

The interviewees identified elements important in further enhancing the cooperation between the Nordics. First, their cooperation on security of supply could be strengthened by establishing a network or a permanent forum for expert exchange and joint exercises. Second, issues related to common infrastructure, energy production, security of supply and border control could be taken up more frequently in different Nordic formats. Third, the Nordic preparedness systems should be better mapped out, including a description of who does what in each country. Fourth, Nordic exchange programmes or expert visits should be initiated to improve the contacts between the organisations and personnel in different Nordic countries. Fifth, long-term funding should be allocated specifically to Nordic cooperation at the national level to sufficiently communicate and commit to it as a priority. And sixth, an exchange of ideas should be ensured in the aftermath of the Covid-19 pandemic concerning the reformation of the health sector and related preparedness capacities, as well as the funding of the required changes.

CONCLUSION

Talking about Nordic resilience is impossible without acknowledging the impact Russia's war against Ukraine has had on the Nordic security landscape. It fundamentally changed the strategic position of both Finland and Sweden and nudged them towards NATO membership almost within a fortnight – though their membership remains for NATO members to ratify at the time of writing. As already highlighted during the Covid-19 crisis, Nordic resilience is more important than in decades.

Russia's war in Ukraine has showcased the importance of security of supply and supply chain resilience. On the one hand, Russia has targeted key civilian infrastructure in Ukraine, including agricultural infrastructure such as grain silos, railways and food warehouses. This has impacted global supplies and raised concerns about reduced food security, especially in already fragile or volatile countries. On the other hand, Russia's own campaign has been hampered by Ukraine's successful disruption of Russia's military supply lines, as well as by Russia's own actions of destroying digital infrastructure in tandem with its failure to effectively deploy its own cables. Moreover, the sanctions against Russia have highlighted vulnerabilities in supply dependencies and the varying political will and options for European countries to diversify or shift to other sources of energy.

The situation in Ukraine is yet another reminder of the need to prepare for similar disruptions elsewhere and have a resilient system in place that can tackle a variety of threats beyond military ones. The extensive cyber-attacks seen against Ukraine serve to remind us that they are deployable elsewhere too. Furthermore, such attacks that target critical functions may be as, or even more, disruptive as direct hostile attacks, for a single

successful cyber operation may sometimes dismantle a whole network of connections (e.g. an electricity grid), the equivalent of which would require a long series of targeted kinetic strikes. In addition, a kinetic strike cannot be expected to erase as much critical data as a successful cyber-attack might, for critical data is often dispersed across multiple nodes.

To a great, but varying extent, the Nordics rely on shipping for the physical flow of goods. A blockade on the Baltic Sea would have significant ramifications on Nordic security of supply, including both Finland and Sweden, which rely heavily on the Baltic Sea for the flow of cargo. What makes the related critical functions even more important is that these supply lines build on the same functions that are in place in times of normalcy, crisis or war. Hence, the better the systems work in a major crisis, the better they are equipped to endure a more serious threat.

Nordic countries remain one of, if not the most interconnected region in the world. As the report has described, this interconnectedness does not come without challenges. While it enables more effortless cooperation, it may also constitute a threat in the Nordics, perhaps more so than in less integrated regions. Indeed, potential disruptions to any vulnerabilities in one country might have an adverse impact on another country exactly due to these interlinkages.

Any negative event in one country could have spillover effects on other Nordics, and there is therefore a vested interest in having resilient neighbours both from a practical and a value-based perspective. Luckily, the Nordics have engaged in long-standing cooperation on various fronts, exemplified by the long list of memorandums of understanding, joint exercises and Nordic institutions established to enable cooperation – within civil preparedness as well. There is, however, room for improvement at both national and Nordic levels, as witnessed during the Covid-19 pandemic. The development of *shared risk perceptions and foresight,* as this report proposes, would extend them from the current to future dependencies, risks, threats and vulnerabilities to enable cooperation in the context of acute events, as well as strategically in the long term. Such cooperation could take the form of concrete workshops, joint foresight scenarios, tabletop exercises and evaluations.

A common challenge noted is the balance between resources and different interests and priorities. Underlying all the work, and the potential for increasing cooperation, are sufficiently allocated resources – both financial and human resources – and having the necessary mandates and priorities. To address the different priorities and available resources, this report recommends the establishment of a *Nordic resilience fund.*

The resilience fund could be used to build up capacities before and in the aftermath of crises to ensure functions return to normalcy as soon

as possible. Such a fund could also be used for piloting new initiatives, which may not be priorities included in the state budget or possible to implement in the everyday work of operational officials. Furthermore, the fund could be activated to finance cross-border functions that are necessary but lack economic logic or political prioritisation in a time of crisis. It could be used to organise operational exercises, cover the costs of capacity building between three or more Nordic countries, including the self-governing regions, that share an interest in developing a specific capacity, or support civil society activities to effectively enhance the whole-of-society approach inherent in the Nordic systems. This could support the establishment of a pooling system to bring together experts from different fields, or alternatively, to identify specific technical experts within areas such as cybersecurity that face challenges in finding enough expertise. The system could be used by the Nordics to tackle a common challenge that threatens Nordic societies' resilience. Since national systems can only be as strong as their weakest link, addressing vulnerabilities and capacity building is important both on the military and civilian sides.

Any efforts to improve resilience will arguably require the involvement of the private sector. Many crucial supply lines are nowadays not necessarily even owned by states but by private companies, which operate on very different operational incentives. How to balance the role of the state and companies is a tricky challenge for many countries to solve, also when it comes to ensuring equal competition or absorption of costs when building sufficient resilience, which may not make economic sense for companies. Furthermore, foreign direct investment, ownership of a certain function and research work may all have a national security aspect to them. Against this background, this report suggests the creation of *Nordic resilience public–private network*, which may bring together actors from both sectors and all the countries and self-governing regions on a voluntary basis. It would also fill the vacuum of the absence of a Nordic network similar to the Haga cooperation but focused specifically on security of supply issues. Such a network could also use pooling in cases in which expertise from other countries could be used for a specific technical issue. Such a network could be supported by the Nordic resilience fund proposed above.

Another concrete result of Russia's war has been the shift in international alliances. The Nordics have traditionally been an interesting mix of different partnerships. Finland, Sweden and Denmark are all EU member states, with Denmark recently voting to join the EU's common defence policy in June 2022. Finland is the only one of the three that joined the eurozone. Denmark, Iceland and Norway are NATO members, and at the time of writing, Sweden and Finland have applied for NATO membership

and are awaiting member states' ratification. As outlined in the report, these differences in international partnerships and frameworks have not posed a significant challenge to Nordic cooperation. For example, during the Covid-19 pandemic, Norway and Iceland were able to join the EU's procurement of vaccines, coordinated by Sweden.

Nevertheless, Finland's and Sweden's accession to NATO will streamline things and bring new possibilities. Their NATO membership would enable deeper operative planning with Norway, for example. In such a trilateral cooperation, there would be no barriers to sharing information and situational pictures. In the long term, there could be potential for a clearer division of labour within defence and presumably more space for enhancing the defence of important Baltic Sea transportation routes.

Moreover, when part of NATO's collective defence arrangements, Finland's and Sweden's membership would substantially increase deterrence in the Northern Europe. NATO would have a significantly better ability to comprehensively plan and conduct military and civil operations in a broader Northern European theatre. The Baltic Sea region would be more or less controlled by NATO member states, which in turn would help to secure the crucial Baltic Sea lines of communication. This would clearly strengthen the security of supply of Finland and Sweden. As partner nations, Finland and Sweden have conducted civil preparedness cooperation with NATO for quite some time already. After the Russian attack on Ukraine in 2022, the level of cooperation has been further increased with the Modalities for Strengthened Interaction (MSI) process, which enhances contacts, information exchange and coordination, as well as provides Finland and Sweden with information on operative aspects of the Alliance. As member states, Finland and Sweden would naturally have full access to the Alliance's civil preparedness planning processes. Through enhancing their civil preparedness cooperation – preferably based on shared risk assessment – the Nordics would also have a stronger and more influential voice in these processes. Joining the NATO Support and Procurement Agency (NSPA) should be viewed as a strategic opportunity to increase national and regional resilience, and the overall process as an opportunity to strategically increase regional cohesion in preparedness issues.

On the other hand, Finland's and Sweden's upcoming NATO membership will also increase the strategic importance of the whole region from Russia's perspective. Ever more sensitive information about NATO procedures, officials and member states will be stored in the region, which will also increase the area's attractiveness in terms of espionage and hybrid influencing. At the same time, the deterrence effect will become

more significant, which is likely to make it more difficult for Russia to use its military power to influence Nordic states and may therefore further increase the attractiveness of cyber and hybrid means. The same is true for China insofar as the area's importance in Arctic policies increases.

Despite this, Nordic cooperation should not be seen as replaceable by these partnerships but rather as complementary to one another. Already now, NATO has developed the so-called seven baseline requirements, and the EU has various initiatives within search and rescue and resilience, among other issues. While some question the relevance of spending money on Nordic cooperation when we already have NATO and the EU, the Nordic level brings other advantages with it. The exceptional level of trust between the Nordics and their long tradition of cooperation remain a key character of Nordic cooperation not seen elsewhere. The very same trust is also the enabler for further cooperation. Achieving similar levels of trust in bigger forums is somewhat unlikely – if not practically impossible simply due to different national levels of trust, priorities and structures. If a deadlock occurs in another forum, Nordic cooperation may function as an extra layer to work on issues that are of common concern to all or some of the Nordics, as seen in their successful cooperation.

Against this background, the report suggests the establishment of a *Nordic resilience framework agreement,* which would enable topical, sectoral or even temporary agreements or memorandums of understanding to respond to changing circumstances, as well as strategic objectives.

APPENDIX

APPENDIX 1: INTERVIEW QUESTIONS

PART 1: National policies and the operational environment

- How would you understand/define the term civil preparedness?
- How would you understand/define the term security of supply?
- How would you describe your national system of security of supply? What are its central elements?
- How would you describe the readiness and capacity of your civil preparedness system to respond to expected challenges in the operational environment?
- What common international developing trends do you see that are related to civil preparedness? What are the central trends and drivers?
- What are the largest/most serious disruptions to your society's critical international linkages and dependencies? Are there attempts to update your security of supply or civil preparedness system to better take into account the above-mentioned changes in the operational environment? How?

PART 2: Nordic cooperation

- How would you describe the current state of Nordic civil preparedness cooperation? What concrete examples would illustrate your point of view?
- How do you experience/view/see the possibilities to strengthen Nordic cooperation? What sectors or concrete initiatives provide the best opportunities for increased cooperation?
- What factors hinder/hamper or make it more difficult to develop Nordic cooperation? How could the circumstances for cooperation be improved?

PART 3: Other issues

- What is your foremost message that you would like to see in the final report? What central themes, drivers and/or considerations should the interviewers take into account in their project?
- What other actors or experts would you recommend we interview?

APPENDIX 2: LIST OF INTERVIEWED STAKEHOLDERS AND EXPERT ORGANISATIONS

Agencies and authorities
    Danish Business Authority
    Danish Critical Supply Agency (SFOS)
    Danish Emergency Management Agency (DEMA)
    Environment agency, Faroe Islands
    Food and veterinary authority, Faroe Islands
    Independent consultants
    National Board of Health and Welfare, Sweden
    National Emergency Supply Agency (NESA), Finland
    National Commissioner of the Icelandic Police (NCIP)
    Norwegian Directorate for Civil Protection (DSB)
    Public Health Agency of Sweden
    Swedish Civil Contingencies Agency (MSB)
    Swedish State Railways (SJ)
    Swedish Transport Administration
    Åland's Health and Medical Services

Ministries, embassies and parliaments
    Embassy of Finland in Denmark
    Embassy of Finland in Norway
    Embassy of Finland in Iceland
    Embassy of Finland in Sweden
    Government of Åland
    Ministry for Agriculture, Self-Sufficiency, Energy and Environment, Greenland
    Ministry of Defence, Denmark
    Ministry of Fisheries, Faroe Islands
    Ministry of Foreign Affairs, Denmark
    Ministry for Foreign Affairs, Iceland
    Ministry of Health and Social Affairs, Sweden
    Ministry of the Interior, Finland
    Ministry of Justice, Iceland
    Ministry of Justice and Public Security, Norway
    Ministry of Trade, Industry and Fisheries, Norway
    Parliament of Greenland
    Parliament of Sweden
    Permanent Mission of Finland to the EU
    Permanent Mission of Finland to NATO
    State Department of Åland

Universities and research institutes

Danish Institute for International Studies (DIIS)
Finnish Institute of International Affairs (FIIA)
Norwegian Defence Research Establishment (FFI)
Royal Danish Defence College
Swedish Defence Research Agency (FOI)
University College Copenhagen
University of Iceland

Private sector

Confederation of Finnish Industries
Confederation of Norwegian Enterprise
Confederation of Swedish Enterprise
Danish Industries
Independent consultants
Norwegian Business and Industry Security Council
SAAB Group
Åland's Chamber of Commerce

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NORDIC RESILIENCE

STRENGTHENING COOPERATION ON SECURITY OF SUPPLY AND CRISIS PREPAREDNESS

Against the backdrop of the COVID-19 crisis and Russia's aggression in Ukraine, crisis preparedness and security of supply have taken on a new urgency. The recent events have demonstrated the fragility of many of the international flows of critical goods, products and services on which the Nordics also depend. As one of the most interconnected regions in the world, it is only through cooperation that the Nordics can avoid supply disturbances and crises that cascade throughout the region.

The Nordics are well placed to enhance such cooperation. Based on extensive comparative analysis, the report shows how the Nordics share key characteristics in their approach to crisis preparedness and security of supply. What this report calls the Nordic resilience approach thus also forms a solid basis for joint action at the regional level.

Finland's and Sweden's imminent NATO accession will further strengthen the potential for Nordic cooperation. It is with this potential in mind that the present report investigates Nordic crisis preparedness and security of supply models, reviews existing cooperation and provides practical recommendations on how to jointly strengthen Nordic resilience. /