



Climate change, security and military organizations: Changing notions in the Swedish armed forces

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ABSTRACT

Climate change has become a critical issue in security policy and military organizations are ever more involved in handling it. Yet, little is known about how armed forces, which often possess substantial resources, are hierarchically structured and have the capacity to exercise force, actually account for climate change and its relationship to security. This article addresses the research gap by analyzing how the Swedish Armed Forces approach climate change and related security issues. The article adopts a qualitative case study research design and an analytical framework for examining climate security discourses, and finds that climate change has become institutionalized in the Swedish Armed Forces. The Swedish Armed Forces conceptualizes climate change in terms of risks and vulnerabilities, and expects the phenomenon to become increasingly critical to its activities. Data for the analysis consist of official documents, publications and public statements by senior officials in the Swedish Armed Forces.

1. Introduction

In line with developments in world politics (McDonald 2013) and among intergovernmental organizations (Dellmuth et al., 2018), armed forces have increasingly recognized climate change as an issue with security implications for states, societies and humans (Brzoska 2012a). Previous research shows that climate change is commonly considered an important factor in military planning (Brzoska 2015) and that militaries are ever more involved in climate change mitigation and adaptation, although the nature and degree of their involvement varies (Jayaram and Brisbois 2021). Even so, little is known about how these organizations, which often possess substantial resources, are hierarchically structured and have the capacity to exercise force, actually account for climate change and its consequences.

By analyzing how the Swedish Armed Forces (SAF) approached climate change and security between 2016 and 2020, this article contributes to the growing research on climate change, security and military organizations which is so far limited to a few contexts. The article also adds to the wider climate governance literature that has not recognized militaries as relevant actors. The SAF's relatively small organization and its position in a comprehensive defense organization make the organization a critical case.

More specifically, this article focuses on how the SAF during the given period of time conceptualized climate change and its implications for security, implemented measures to prevent and adapt to its consequences, and envisaged future consequences of climate change for the organization. To answer the overall question of how the SAF approach climate change and related security issues (?), the article adopts a qualitative case study research design and a theoretical framework based on Diez et al.'s (2016) assessment of climate security discourses. Data for the analysis consist of official documents, publications and public statements by the SAF.

The empirical analysis shows that climate change has been institutionalized in the SAF and that the organization's approach to climate change, defined as understandings of and responses to the issue, is based on a risk logic of security. The SAF describes climate change and its relationship to security in terms of challenges and vulnerabilities, and its already implemented measures aim to increase knowledge and strengthen contingency. Importantly, the SAF expects climate change to become more critical to its activities over time. These findings demonstrate that climate change, in some contexts, is considered significant by armed forces and that military conceptualizations of climate security differ also at more fundamental levels. Although the SAF ultimately is tasked with territorial defense and responses to distinct threats, it

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conceives the relationship between climate change security issues in a broader light.

The article begins with a discussion of previous research on climate change, security and military organizations. Then follows descriptions of the research design and the analytical framework forming the basis of the study. Lastly, the empirical analysis is presented and the subsequent findings are discussed in relation to existing literature.

2. Climate change and military organizations

Previous research has explored climate change and armed forces in various respects. According to [Brzoska \(2015\)](#), military organizations appear as objects or subjects in three discussions within the climate change and security literature. The first discussion is based on ideas formulated in the 2000s of a turbulent and violent future caused by climate change, and implies that military means can be used to protect people and states if necessary. Although studies show that climate change rather affects already known drivers of small-scale conflicts and human security issues ([Adger et al., 2014](#)), fears of interstate wars and catastrophic humanitarian disasters have influenced climate discourses and policies ever since. And a greater need for military means is easily justified when dangers seem imminent ([Brzoska 2015](#)). Literature on climate change and security is accordingly “full of remarks on the future demand for activities by armed forces” ([Brzoska 2015](#), 3).

The second discussion relates to the influence of military officials and organizations on climate policy discourses. Particularly in the US, officers and institutions close to the armed forces have influenced policy debates on climate change and security ([Floyd 2010](#); [Brzoska 2012b](#)). For example, the concept “threat multiplier”, which was formulated in 2007 by the [CNA Military Advisory Board \(2007\)](#) to describe how climate change influences key aspects of US national security, is now widely established, albeit differently interpreted, in policy circles ([Abrahams 2019](#)). [Brzoska \(2015\)](#) argues that this discussion is less focused on catastrophic scenarios and more attentive to short-to mid-term changes. It also emphasizes the direct consequences of climate change for armed forces, including its effects on military planning and capacity ([Foley 2012](#); [Spencer et al., 2009](#); [Carmen et al. 2010](#); [McGrady et al., 2010](#)).

Analyses shows that climate change has significant implications for military strategies and operations ([Briggs, 2012](#); [O’Lear et al., 2013](#); [Smith 2007, 2011](#)). According to [Melton \(2018\)](#), climate change is challenging for militaries in two ways. First, it directly threatens (US) military readiness, capacity and infrastructure since extreme weather events, rising sea levels and global warming, among other things, harm military equipment, installations and personnel (see also [La Shier and Stanish, 2019](#); [Hayden 2018](#); [Brzoska 2012b](#)). Second, it indirectly influences geopolitical and global economic risks which, in turn, affect militaries’ missions, operating environments and roles. Many states therefore consider climate change important for their security and defense policy ([Brzoska 2015](#); [Holland and Vagg, 2013](#)).

The third discussion outlined by [Brzoska \(2015, 175\)](#), in which securitization is a key concept, is a “critical debate on the use of climate change in discourses on future security, and particularly military, requirements” (see, for example, [Oels 2013](#); [Trombetta, 2012](#)). According to [Brzoska \(2015\)](#), scholars have assessed whether discussions about climate change and insecurity have created a discourse dominated by the idea that climate change is best handled by military means. It is generally agreed that this has not happened, but it is disputed whether such debates instead have affected military practices ([Brzoska 2009, 2012a](#)). Within this discussion, climate change has also come to be increasingly described as a factor among others that present unpredictable risks and “require broad sets of measures, such as the prevention and strengthening of the resilience of potentially affected people and communities” ([Brzoska 2015, 175](#)). The focus of the debate has thus shifted from concerns of militarization to the wider effects of securitization (see, for example, [Corry 2012](#); [Oels 2012](#)).

Taken together, the three discussions show that a general focus on the relationship between climate change and security often implies attention to military activities and organizations. To better understand this, scholars have explored how armed forces themselves actually approach climate change and related security issues. [Thomas, 2015, 2017](#) claims that the US Armed Forces and the Australian Defence Forces started addressing climate-related issues in the mid-2000s. But while the former then continued to implement measures to increase resilience, secure energy supplies and improve its competitiveness, the latter withdrew most climate-related initiatives as a new government changed focus. Recent research, however, shows that the extensive 2019 and 2020 bushfires in Australia triggered public and political debate in the country about climate change and security. Among other things, the Australian government has since emphasized a “potentially significant role for the defence and military sectors in addressing” the security implications of climate change ([McDonald 2021, 12](#)). [Jayaram \(2020a\)](#) argues that the Indian Armed Forces, in contrast, is engaged in humanitarian assistance and disaster relief, but that it neither has declared climate change critical to its operations, strategies and survival nor integrated climate change into its policies. Research on armed forces’ approaches to climate change and its consequences is, nevertheless, limited to only a few contexts and perspectives.

More recently, military organizations have also been discussed in relation to the climate governance literature. According to [Jayaram and Brisbois \(2021, 1\)](#), “it is necessary to more fully account for their role in climate governance”. Military organizations have become increasingly influential in climate mitigation and adaptation, especially for climate extremes, because of their capacity to handle crises, contribute to technical innovation, organize exercises and conduct scenario planning. And as already demonstrated, militaries are capable of influencing knowledge production, resource provision and decision-making. Yet, military organizations, including armed forces, have typically been disregarded in climate governance research ([Jayaram and Brisbois 2021](#)). Through an in-depth study of the SAF based on a theoretical framework developed by [Diez et al. \(2016\)](#), this article addresses the gap in the wider climate governance literature as well as contributes to the growing literature on climate change, security and military organizations.

3. Research design

To better understand how armed forces account for climate change and related security issues, this article, as suggested by [Jayaram and Brisbois \(2021\)](#), focuses on the military as an actor in its own right. More specifically, it explores how the SAF approached the relationship between climate change and security between 2016 and 2020.

In the context of analyzing climate change, security and military organizations, the SAF constitutes an interesting case for two reasons. To begin with, the SAF is a relatively small military organization, both in financial and organizational terms, especially when compared to previously studied cases. While Sweden’s military expenditure reached about 1.2 percent of its gross domestic product in 2020, the previously analyzed states of Australia, India and the US spent approximately 2.1 (AU), 2.9 (IN) and 3.7 (US) percent of their gross domestic products on their militaries in the same year ([SIPRI, 2020](#)). And in terms of full-time active forces, the SAF employed about 15,000 militaries in 2020, compared to the Australian Defence Force’s 57,000, the Indian Armed Forces’ 1,456,000 and the US Armed Forces’ 1,380,000 military personnel ([IISS, 2020](#)). Since armed forces’ resources and influence are often used to advocate for their involvement in climate governance, it is important to also examine how relatively small military organizations approach the issue.

Furthermore, the SAF is part of a larger defense structure. In 2015, the Swedish Government decided to resume planning of the state’s total defense, which until then had been dormant for many years ([Försvarsmakten, 2020e](#)). A total defense is based on a whole of society

approach to security and includes formal collaboration between armed forces, government agencies, civil society organizations, actors from the private sector and the general public (Wither, 2020). Besides deterring or preventing violent aggression, the orientation aims to strengthen society's general resilience and preparedness (Saxi et al. 2020). The SAF thus operates in a context significantly different from those of other armed forces. On the one hand, the SAF is part of a greater defense structure with security aspirations beyond conventional military ones, such as "protecting and defending the country, human life and health, the functions of society, and democracy and human rights" (Försvarsmakten, n.d., own translation). On the other hand, the SAF is tasked to regularly interact with civilian actors, private as well as public. Given that climate change in many ways is a site of contestation between actors with different notions of what climate change means and how best to deal with it (see, for example, McDonald 2013), the Swedish defense structure likely provides a unique context for military approaches to climate change.

Taken together, the SAF's size and its role in a comprehensive defense structure makes it a critical case in the context. Flyvbjerg (2010, 229) defines critical cases "as having strategic importance in relation to the general problem". The SAF significantly differs from previously analyzed cases in the field and provides new insights on the phenomenon of interest and potential explanations for it. Although the SAF does not enable deductions of the type, "if this is (not) valid for this case, then it applies to all (no) cases" (2010, 230), it challenges and extends previous accounts (see also, Yin 2013) of militaries' conceptualization of and responses to climate change and its consequences. This article thus deepens the empirical and theoretical knowledge about military organizations' approaches to climate change.

The selected time period for analysis, 2016–2020, is Sweden's most recent defense decision period and coincides with the Swedish government's already mentioned decision to resume planning of the state's total defense and its publication of the Swedish national security strategy. Swedish defense decisions are made by the Swedish Parliament approximately every four years and determines the SAF's short-term priorities and developments. After decades of focusing on international peace efforts, the 2016–2020 Swedish defense decision, adopted in 2015, stipulated a re-prioritization of the state's territorial defense and strengthening of the SAF's military operational capacity (Regeringskansliet 2015). Early in this period, climate change was furthermore declared a national security issue in Sweden. In January 2017, the Swedish Government published Sweden's first national security strategy which advocates a broadened security perspective and lists climate change as one of eight threats that challenge Sweden's ability to protect its population and country in the short and long term (Government Offices of Sweden; Prime Minister's Office, 2017, 5).

Data for the analysis consist of publicly available documents, including instructions, defense planning documents, short-term orientations, assessments of conducted activities and guidelines, as well as public information and statements by senior officials in the SAF. According to Brzoska (2012a, 165), "defence planning documents outline the consequences of security strategies for armed forces" and by examining them, one can answer, "whether and how security elites have adopted the claim that climate change is a security issue, and what kind of measures and activities they are promoting as a consequence". The information was retrieved from the SAF's website and its public information channels. A total of 24 policies and reports with attachments, together constituting more than 1400 pages, and 11 information pages and public statements were analyzed. The documents address a wide range of the SAF's activities, units and areas of responsibility, domestic as well as international.

The data were coded and analyzed using MAXQDA, a software program for qualitative analyses. A unique set of codes was developed in line with the theoretical framework outlined below to facilitate assessment, classification and comparison of the SAF's climate-related formulations and measures. The code-set consists of three overarching

categories, conceptualization of climate security, responses to climate change and related security issues, and expected future changes, of various sub-codes and indicators. The results of the analysis were lastly checked against information provided by officials at the SAF Headquarters in three semi-structured interviews.

4. Analytical framework

Securitization theories and frameworks have frequently been used for analyses of the emergence of climate change, what is sometimes referred to as a nontraditional threat (see Buzan et al. 1998; Krahnmann 2005), in security discourses. According to the Copenhagen School of security studies which originally formulated the concept of securitization, security does not have an objective or universal meaning. Instead, it "depends on the successful representation of something or someone as an existential threat to a referent object ... to legitimize extraordinary measures" (Diez et al. 2016, 3). Successful in this context means that a defined audience accepts a securitizing move (Buzan et al. 1998). However, the Copenhagen School's notion of security has been criticized for its narrowness, its unclear definitions of key concepts and lack of attention to alternative security practices (see, for example, Trombetta, 2012; Corry 2012; McDonald 2013).

To overcome some of these weaknesses and enable empirical analyses of the diversity of discursive framings of climate security, Diez et al. (2016) have developed a framework for securitization of climate change along two dimensions: the level of the referent object and the underlying security logic. The first dimension consists of the three most common referent objects of security in the climate change and risk literature: individuals, territories and the planet. The second dimension consists of two versions of securitization, riskification and threatification, distinguished by the level of threat concretization, the distinction of the threat and its time horizon.

The concept of risk was introduced in the security literature as an alternative to the Copenhagen School's framework which arguably failed to see diffuse forms of power and the development of framings in everyday bureaucratic practices and routines (Diez et al. 2016). In contrast to threat, the underlying logic of the Copenhagen School's notion, which is existential, direct and urgent, risk constitutes a latent danger characterized by uncertainty and unease. While a threat "calls for emergency measures to prevent the threat from materializing under any circumstances", a risk approach "tries to mitigate the possible consequences of climate change or other threats (for instance, through increasing resilience) and to tackle their constitutive causes" (Diez et al. 2016, 9). Risk has accordingly become a common framing for climate-related dangers.

Unlike previous theorizing where threat and risk are understood as separate processes (see, for example, Corry 2012), Diez et al. (2016) see them as two variants of the same outcome: securitization. They argue that threatification and riskification together form a securitization continuum on which threat and risk intersect, and use politicization to describe the alternative state where issues remain within or are reintroduced to the realm of normal politics. Threat, or "danger" as described by Diez et al. (2016), risk and politics are three poles of a model for analyses of political debates and discourses on climate security. Issues are "threatified" if articulated in ways, with regard to concretization, distinction and time horizon, that drives them towards the threat-pole, and "riskified" if formulated in ways that move them closer to the risk-pole. Alternatively, issues are "politicized" if they are not described and/or accepted at all in terms of security.

The two categories of referent object and underlying security logic together form a typology of six climate security discourses with varying impacts on political processes and policies: individual danger, individual risk, territorial danger, territorial risk, planetary danger, and planetary risk. Articulations within these discourses address two constitutive questions: one emphasizing the given problem and related threats or risks, and one highlighting suggested measures for handling them (Diez

et al. 2016, 20). These two aspects, conceptualizations of climate change and subsequent responses, both implemented and envisaged, together constitute what throughout this article is referred to as approaches to climate change and security. Diez et al.'s (2016) framework and methods for analyzing articulations enable systematic but nuanced assessments of contextually dominating climate security discourses. For the purpose of this article, their framework is used to examine the SAF's approach to climate change and related security issues.

In more concrete terms, the empirical data was analyzed in three steps. First, the SAF's description of the relationship between climate change and security, particularly focusing on accounts of climate-related security challenges, was analyzed by frequency of articulations, their centrality and intensity. Centrality concerns the type of documents or settings in which articulations appear and their significance within those contexts. The intensity of the articulation depends on the severity of the statement, for example, how alarmist the formulation is (Diez et al. 2016). Second, climate-related policy measures were examined by their implementation and design. Third, the SAF's envisaged future changes with regard to climate change were analyzed. Like other military organizations, the SAF continuously analyze strategic trends, the changing nature of conflicts and the shifting operational environments, often from a long-term perspective of several decades ahead. An analysis of future expectations, formulations and strategies reveals the SAF's approach to climate change and security also in the longer term. The empirical analysis below is structured according to these categories.

5. Empirical analysis

The SAF has worked with environmental issues for almost three decades. Following government regulations in 1993, a year after the United Nations Conference on Environment and Development in Rio de Janeiro, Brazil, the Swedish Department of Defense urged the SAF to actively engage in environmental issues, among other things by establishing an environmental policy. In 1994, an environmental unit was established at the SAF Headquarters and guidelines for the organization's environmental work were formulated (Försvarmakten 2019b). Since then, the SAF has systematically accounted for environment-related matters.

The overall purpose of the SAF's work on environmental issues has consistently been to reduce the organization's adverse impacts on the environment and contribute to Sweden's environmental commitments. Specific efforts include assessments of environmental impacts, preventative measures and management of past environmentally harmful acts. For example, in 1998, the SAF filed a report to the Swedish government on environmentally hazardous residues from exercises and in the late-1990s, several tons of old ammunition were removed from important water sources at Gotland (Försvarmakten 2019b). Over time, sustainability has gained more space in the SAF's increasingly comprehensive environmental efforts. Since 2001, the SAF's environmental policy is adapted to the environmental management standard Iso 14001, and today, the organization actively works towards Sweden's environmental goals and the United Nations 2030 Agenda for Sustainable Development (Försvarmakten 2019b). However, to the extent that the SAF's environmental work concerns climate change, it is limited to energy efficiency and green transition, not its wider implications for security.

5.1. Conceptualization of climate security

The SAF's ultimate purpose is to ensure Sweden's freedom by protecting its territory and values. According to its instructions, the SAF should be able to quickly assume full readiness, prevent and manage conflicts and wars, increase security by participating in domestic, regional and international efforts, protect Sweden from political and military pressure, defend the state against armed attacks, protect sovereign rights and interests outside Swedish territory and support other government agencies (Försvarmakten, n.d.). With regard to climate

change, the SAF commonly describes it as an issue with potential implications for national and international security, where the latter is expected to negatively affect the former. Given the typical mandate of national defense organizations, the state of Sweden, or territory as formulated in the analytical framework, is the SAF's primary referent of security.

Throughout 2016–2020, the SAF emphasized the potentially inhibiting effect of climate change on global development, stability and security. In the organization's Manual for the Environment (2016b), published in 2014 and updated in 2016, climate change is described as one of the greatest security challenges of our time, with links to development and stability. Climate change and subsequent effects are allegedly expected to harm already fragile human and ecological systems (Försvarmakten, 2016a, 2016b, 2016c, 2016d). Extreme weather events and natural disasters are used as examples of the immediate dangers of climate change whereas migration and radicalization, among other things, are used to highlight its indirect implications for peace and stability.

Following a government regulation on climate adaptation (Regeringskansliet, 2018), decided in June 2018 and introduced in January 2019, the SAF intensified their efforts to mitigate the effects of climate change on the organization's activities. Climate adaptation here refers to the prevention of climate-induced vulnerabilities, assurance of operational capacity and the adaptation of security analyses. In this process, the SAF also nuanced and specified its approach to climate change, increasingly describing it as a factor with complex consequences at different levels across policy areas (Försvarmakten, 2019a, 2019c, 2020b, 2020c). The previously dominant framing of climate change as a driver of geopolitical change, illustrated by a focus on the Arctic region in strategic documents, was supplemented by considerations of the risks generated by climate change for the organization and the society more generally. Since 2019, the agency thus adopts a more comprehensive approach to the relationship between climate change and security. It simultaneously emphasizes the direct and indirect consequences of climate change for conflict patterns, operational environments, geopolitical factors and humanitarian crises (Försvarmakten, n.d.). The SAF has thus extended the referents of security to people more broadly.

In later documents and publications, the relationship between climate change and security is commonly defined in terms of challenges, vulnerabilities, risks and related effects. The 2019 Annual Report (Försvarmakten 2020b, 56, own translation), listing the government agency's activities during the year, states that "conflict patterns, security policies, geostrategic conflicts of interest and areas of operations" are affected by the changing climate. And in 2020, the Swedish Commander-in-Chief, Micael Bydén (2020, 9, own translation), used "security related effects of climate change" to illustrate how events in distant places can severely affect security in and for Sweden. Rather than framing climate change as a threat to security, as is commonly done in national climate security discourses, the SAF, to the extent they talk about it, describe climate change as a factor that increases vulnerability.

Although climate change and related security issues are not a top priority in the SAF, it is something the organization increasingly account for. After 2018, climate change is mentioned in more documents and a wider variety of publications, including strategic planning documents and reports by the military intelligence service, than before (Försvarmakten 2020a).

5.2. Responses to climate-related security issues

Initiatives following the 2019 government regulation on climate adaptation also form the core of the SAF's response to climate change and related security issues. According to a statement in the 2018 Environmental Report, the SAF "must be able to operate in the new, changing conditions, and maintain a strong operational capacity, with the health of its staff in focus" (Försvarmakten 2019a, 13, own translation). The SAF mainly try to mitigate the effects of climate change for Sweden's

security and its own capacity to fulfill its duties. In its Environmental Policy (2019e, own translation), the SAF states that one of its two goals in the area of energy and climate is to “adapt its proceedings to maintain the Swedish Armed Forces capacity in a changing climate”, and an important step in that direction is allegedly to identify vulnerabilities and risks.

As stated in the Handbook for Internal Control (2019d), the SAF includes “climate risks” in its standardized framework for risk analyses. Risks are defined as issues that affect the SAF’s ability to fulfill its tasks, achieve its goals and carry out its missions. And risk analyses are the coordinated activities to identify and evaluate risks, and the subsequent decision about whether and how to handle them. The analyses concern all of the organization’s activities and subsequent measures must be proportionate to the expected dangers. In 2019, the SAF developed a specific model for analyses of climate, risk and vulnerability which specifies distinct methods and procedures. Risk analyses of climate change will be carried out for all operations, units and regions, and the assessments will be part of the SAF’s long-term strategic work (Försvarmakten 2019d, 2020d). Evaluations and revisions will be made continuously, but the overall assessment will be formally updated at least every five years.

In line with the 2019 government regulation, the SAF has formulated an action plan for climate adaptation that lists measures to mitigate climate-related dangers (Försvarmakten, 2019c, 2020d). Specific action plans for different parts of the organization will be developed according to unit-specific vulnerability analyses and discussions will be held with the Swedish military regions to ensure that policies account for context-specific factors. Already conducted risk analyses shows that different regions are exposed to different climate-related risks, without further specification (Försvarmakten 2020b). Procedures for monitoring and evaluating the action plan have been established, it will be reviewed annually and updated every five years (Försvarmakten 2019d). The SAF’s action plan for climate change adaptation is not publicly available and could thus not be included in the analysis.

In addition to the measures described above, the SAF appears to explore new methods and techniques for assessing and adapting to climate change. Among other things, the SAF has initiated discussions on climate-related matters with the Swedish Defense Materiel Administration, the Swedish Fortifications Agency and the Swedish Defense Research Agency, three agencies in the Swedish defense sector (Försvarmakten 2019c, 2020b), and conducted workshops on climate change and security with other actors within the Swedish total defense. Following its instruction to support Swedish society, the SAF also collaborates with other Swedish authorities in crisis management. Crisis management and societal support is a well-established function that has been used for many years. In 2014 and 2018, for example, the SAF provided personnel, equipment and expertise to fight extensive wildfires around the country (Försvarmakten, n.d.). The SAF expects such operations to become more common with the changing climate (Försvarmakten, 2016a, 2016c, 2019a).

5.3. Expected future changes

The SAF expects climate-related security issues to become increasingly severe over time and believes that the organization will play an important role in handling them. At a conference in 2017, in a session on future trends in security policy, Dennis Gyllensporre (LEDS) at the Armed Forces Headquarters emphasized “energy and climate” as one of five important long-term trends for the SAF and Swedish security (Försvarmakten 2017, own translation). And in a report, published in 2016, about military strategic trends, the nature of conflicts and operational environments over the next 20 years, “environmental and climate change” is listed as one of the most critical issues (Försvarmakten 2016d). Although the report entails uncertainties, it shows that climate change is part of the SAF’s thinking and planning ahead. The report addresses climate change from an aggregated global

perspective and pertains that factors such as rising sea levels and resource scarcity may lead to increased risks of tensions and conflicts. In line with previous conceptualizations of climate security, the increased exploitation of Arctic, made possible by global warming, is also discussed as a critical aspect for Swedish security policy (Försvarmakten 2016c, 2016d).

Regarding assessments of potential climate-related security issues and their significance for the organization, the SAF take different scenarios into consideration. The mentioned impact of climate change on the geopolitical development is a recurring theme and the increased need for humanitarian assistance is another crucial point. At an information page about climate change, the SAF states that “operations, infrastructure and availability is affected by slow changes, for example sea level rises, but also by sudden extreme weather events that are expected to increase in strength and frequency”, and clarifies that “the Swedish Armed Forces offers support to society in the event of natural disasters” (Försvarmakten, n.d.). The 2019 annual report touches upon a potentially changing role following climate change, stating that “conflict patters, security policy, geostrategic conflicts of interests and operational environments are affected by a changing climate. This influences the Armed Forces role and tasks, both nationally, regionally and international operations.” (Försvarmakten 2020b, 56, own translation).

The SAF evaluates developments in different time spans. Development plans, which aim to achieve long-term balance in operational capacity, look 10 years ahead and military strategic plans usually look 20 years ahead (Försvarmakten, n.d.). While climate change is not discussed in the latest short term analysis, published in 2016, climate change and environmental degradation are described as issues with significant implications for global development in the latest long term report (Försvarmakten 2018). Since the 2019 procurement and allocation of resources for climate adaptation to the Joint Forces Command, however, no new reports of these types have been published.

Taken together, the SAF acknowledges that its role and responsibilities may change in the future due to climate change. The SAF repeatedly states that it may become more engaged in (humanitarian) crises prevention and management, and that changing geopolitical patterns, influenced by climate change, forces them to adjust. Importantly, the government regulation on climate change adaptation and the agency’s aim to “adapt its proceedings to maintain the Swedish Armed Forces capabilities following a changing climate” (Försvarmakten 2019e, own translation), show that the organization intends to further its emphasis on climate change and related security issues onwards.

6. Findings and discussion

Climate change is not, and is unlikely to become, a dominant issue for the SAF. However, a significant change in the matter took place within the organization a few years ago. After the introduction of the government procurement on climate adaptation in 2019, the SAF began to address climate change and its relationship to security more purposely. The SAF’s aim to adapt its proceedings to maintain capability in a changing climate, its inclusion of climate change in strategic documents, and statements by senior officials on the significance of the issue indicate that some form of institutionalization of climate change and its relationship to security has occurred.

The SAF increasingly describes climate change as a complex issue with implications for security and its own capacity to provide it. It recognizes that climate change can affect conflict patterns, operational environments, geopolitical strategies as well as humanitarian crises, and it strives to be able to cope with the changing circumstances. The organization has moved away from merely conceptualizing the relationship between climate change and security in ways consistent with the discourse Diez et al. (2016) call “territorial danger”. Territorial danger is a threatification of climate change, limited to a specific geographical area, that stresses social unrest as a critical consequence of climate change and emphasizes short-term extraordinary measures. The SAF has

instead adopted a notion of climate security that resembles Diez et al.'s "territorial risk". This is a riskification of climate change focused on the probability of "climate-induced conflicts or instability in certain risk areas as identified by statistical risk assessments and scenario planning schemes, requiring contingency planning for events that seem unlikely but may entail catastrophic consequences" (Diez et al. 2016, 22). Given the SAF's concern with humanitarian disasters, its conceptualization of climate change and security also entails aspects of Diez et al.'s individual climate security discourses.

With regard to research on the integration of climate security discourses into policy process, the SAF's notion of climate change and security bears similarities to what Abrahams (2019) calls a "challenge of adaptation and resilience". From this perspective, the climate–security relationship is seen as a risk that is best managed through adaptation and measures for resilience (Abrahams 2019). The consequences of climate change may increase communities' vulnerability and exposure to dangers which, in turn, can cause other risks and thereby reduce overall security. Climate-related security issues are consequently best handled through preparation and general resilience-building. In later documents, the SAF stresses dynamics similar to this framing and emphasizes the need to improve readiness more generally, which also speaks to its ultimate mission of providing security for and in Sweden. According to Abrahams (2019, 330), the general weakness of a "challenge of adaptation and resilience" is the uncertainty about "how, and where, to adapt or build resilience to the linked challenges of climate change and insecurity" within the policy circles it is adopted. The same may apply to the SAF since most responses, to date, focus on knowledge acquisition, revision, planning and exploration of new methods and techniques for climate change adaptation.

These findings confirm earlier insights about the significance of climate change within certain military spheres, but provide a more nuanced picture of how the issue is approached. Armed forces' concern with climate change is not necessarily limited to the ways in which it affects their operational capacity and territorial security. The analysis of the SAF shows that, in certain contexts, military organizations conceive climate change and its relationship to security in more comprehensive ways. During the time period analyzed, the SAF increasingly described climate security in terms of latent risks that requires general societal preparedness. This article thus demonstrates that military approaches to climate change differ also in more fundamental ways.

Furthermore, the empirical analysis shows that the SAF, as regards climate change, security and the organization's future role, foresees parts of what Brzoska (2015) argues are the two most common expected futures among armed forces: disaster relief and significance of conventional military roles. On the one hand, the SAF assumes that climate change will increase the need for disaster relief. This concerns both natural disasters and complex humanitarian emergencies. On the other hand, the SAF repeatedly emphasizes that climate change may increase national security problems, suggesting that there will be continued, or even growing, needs for conventional military capabilities. The latter notion is particularly prevalent in older documents that stress potential geopolitical changes due to climate change, typically in the arctic region.

From a broader climate governance perspective, the SAF's approach to climate change and its relationship to security arguably has implications for general discussions about climate change in Sweden. Only surpassed by the Police and with almost twice as many employees as the third largest authority, the Swedish Social Insurance Agency, the SAF is the second largest government agency in Sweden (Statskontoret 2022). And according to recent numbers, it is one of the most respected government agencies in the country. In 2021, the SAF received the eleventh highest reputation figures, defined as general reputation, emotional relatedness (personal impression and trust) and perceived competence (quality of its services and success), among Swedish authorities, well above average (Orbe and Sjören 2021). How the SAF talks about and responds to climate change may, given its reach and perceived expertise,

thus influence perceptions of the issue and climate policy in a wider sense.

Although this article does not seek to explore why the SAF changed its approach to climate change, some conceivable explanations has emerged. From a neorealist perspective, the Swedish government's interests and ambitions may have influenced the SAF's increased attention to climate change and its relationship to security (see, for example, Jayaram 2020b). For example, the publication of the Swedish National Security Strategy affirms climate change as a national security issue that the SAF should account for. In addition, given the demonstrated impact of climate change on military organizations, there are strategic rationales for the SAF to mitigate and adapt to subsequent risks. Following an organizational and cultural perspectives, in contrast, changing climate attitudes among the public and other organizations may have affected the SAF's approach to the issue. The 2019 Annual Report (2020b) states that it is important for the SAF to maintain trust and legitimacy of employees and the general public in times of change and development. And surveys conducted by the agency itself, show that climate change is the greatest (security) concern among the population, ahead of issues such as war, violent conflicts and terrorism (Forsvarsmakten 2019c). Lastly, the growing international and domestic attention to climate change and related security issues may also have influenced the organization's position on the issue. But regardless of what is actually causing the changes, it is clear that the SAF is a moving entity that adapts to changes in its surroundings.

Since climate change was recently institutionalized in the SAF, it remains to be seen how the organization's approach to the issue develops and whether the discursive changes materialize into distinct measures. The SAF's development in the matter is particularly uncertain given recent developments in European security policy and Swedish politics. In 2022, a series of decisions were made regarding substantial increases in Swedish defense spending and expansion of both the Swedish military and civil defense (Regeringskansliet, 2022). In addition, Sweden has together with Finland recently pledged to join the North Atlantic Treaty Organization and it seems only like a matter of time before the states become full member of the military alliance. These decisions can be seen as responses to the Russian invasion of Ukraine and related changes in the European security policy. Furthermore, a new government consisting of the Moderate Party, the Liberals and the Christian Democrats, and supported by the Swedish Democrats, took office in Sweden a few months ago. Early decisions and statements by the new government indicate a distinct shift in Swedish climate ambitions and policies. The SAF is thus facing structural, organizational and political changes which may well influence their approach to climate change.

7. Conclusion

Through an examination of the SAF's approach to climate change and its relationship to security, this article contributes both to research on climate change, security and military organizations, and the wider climate governance literature. Previous research on military organizations and climate change has exclusively focused on large and influential armed forces. But since similar factors are used to legitimize military involvement in climate governance, it is important to also analyze armed forces in distinctly different contexts.

Because of its relatively small organization and its position in a larger and more comprehensive defense structure, the SAF constitutes a critical case. The empirical analysis shows that climate change has been institutionalized in the SAF and that its conceptualization of the issue altered in the late 2010s. Based on a risk logic of security, the SAF increasingly describes climate change in terms of challenges, vulnerabilities and subsequent effects. And with regard to the future, the SAF expects climate change to become ever more pressing and increasingly significant for its role and operations. Taken together, the findings demonstrate the perceived significance of climate change in some military

spheres and that armed forces conceptualizations of climate security can take different forms. Although the SAF is ultimately responsible for Sweden's territorial integrity, it addresses climate change and its relationship to security in a wider sense.

Together with other studies with similar focus, this article provides important knowledge about how military organizations, a relevant actor in climate governance, actually conceptualize and respond to climate change and related security issues. This will, in turn, help us to better understand the dynamics of climate and security policy.

CRedit authorship contribution statement

Rickard Söder: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, Writing – original draft, Writing – review & editing.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

Data will be made available on request.

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