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Politics of climate risk management in local government: a case study of the municipality of Stavanger

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The case study presented in this paper was conducted to study the politics of local-level climate risk management and discuss these politics' implications for responses to climate change and democratic deliberation. Local government plays an important role in the response to climate change, in particular with reference to coping with unwanted consequences of climate change, such as more frequent and intense extreme weather events, including torrential rain and flooding. Climate risk management is an approach that local government can adopt to deal with these unwanted consequences. To investigate the politics of local-level climate risk management, we conducted a case study of the municipality of Stavanger in Norway. In analyzing this case study, we drew on literature on the securitization of climate change, in particular, that of risk-based securitization of climate change produced by governmental power. The analysis given here is derived by applying the concept of risk logic understood as the translation of unwanted consequences of climate change into climate risk together with the actions and use of tools influenced by the discipline of risk analysis thereby entailed. Risk logic manifests in political discourse, actors, and tools. In this case study, the justification for risk logic on unwanted consequences of climate change at the local level comes from national-level laws and regulations. Moreover, climate risk management is translated into existing bureaucratic routines, organizational structures, and the activities of professionals. Risk tools play an essential role in making unwanted consequences of climate change governable and can manifest as a consequence of risk logic or can convey risk logic. The analysis implies that the securitization of climate change based on governmental power at the local level has a depoliticizing effect on the issue. Moreover, the unique characteristics of unwanted consequences of climate change fade as climate risk is seen as a risk driver to be factored into existing and well-known risks, and thereby normalizes the situation. Finally, the focus on the cause of climate change seems to diminish because safety is a function of the referent objects, and the response thereby becomes decoupled from the wider issue of global warming.

KEYWORDS

climate risk, securitization, riskification, risk analysis, climate change adaptation, risk logic

1. Introduction

The case study presented in this paper was conducted to investigate the politics of local-level climate risk management and identify these politics' implications for responses to climate change and democratic deliberation. We studied these politics through a securitization lens and analyze the manifestations of risk logic in terms of political discourse, actors, and tools in the municipality of Stavanger, Norway. To guide our investigation, we posed two research questions: 1. How is climate change securitized at the local level? 2. How does the securitization of climate change in local government affect the response to climate change and democratic deliberations?

Climate change is a major contemporary political challenge, and the stakes are high both for those who govern and those who are governed. Local government has an important role to play in the response to climate change, particularly with respect to handling its unwanted consequences, such as more frequent and intense extreme weather events, torrential rain, flooding, and so forth. When governments pursue a risk approach to unwanted consequences of climate change it can produce a second-order politics of conditions of possibility, where the focus is on the object of protection rather than on the cause of danger or risk (Corry, 2012). On the other hand, a risk approach to a policy issue can involve requesting the inclusion of expertise and scientific knowledge that can strengthen the basis for decision making (Aven, 2020). Moreover, a risk approach can involve a way of looking at the future that entails searching for catastrophes on the horizon, and these possible catastrophes impose limits on political choices today (Amoore, 2013). Alternatively, risk politics can be embedded in normal bureaucratic routines to discipline those who are governed (Aradau et al., 2008). However, risk conceptualizations in political systems are neither inevitable nor innocent (Bengtsson et al., 2018). The risk politics described above might and might not carry over to the climate risk management of a local governing body.

To investigate the politics of local level climate risk management, we draw on securitization literature and specifically discussions on the securitization of climate change. The securitization of climate change refers to a change in how the policy issue is handled in comparison to before security implications were considered (Trombetta, 2008; Diez et al., 2016; von Lucke, 2020). In this paper, we explore the securitization of climate change at the local level by drawing on von Lucke's (2020) categories of securitizations of climate change. Particularly, we make use of von Lucke's (2020) category called securitization of climate change produced by governmental power. This is a risk-based securitization of climate change that relies on governmental power which is a specific mode of state power that utilizes the potency of "social scientific knowledge that enables to measure and discretely influence population dynamics" (von Lucke, 2020, p. 25).

The literature on securitization of climate change has focused on studying variations of securitization at the international and national levels (Trombetta, 2008, 2021; Corry, 2012; McDonald, 2013, 2021; Diez et al., 2016). This paper focuses on the securitization of climate change at the local level, which has received little attention in the literature. The rationale for the case study is that, on the one hand, the local level seems to have been

understudied hither to, while on the other hand, local government plays a crucial role in the response to unwanted consequences of climate change (IPCC, 2012, 2014; United Nations, 2015). This study therefore forms a contribution to closing a research gap at a time when the relevance of local action in response to unwanted consequences of climate change is increasing.

To answer the research questions, we conducted a case study of the municipality of Stavanger, Norway (see Yin, 2018). Stavanger is the Norwegian capital of the oil and gas industry. A significant number of the area's employers and amount of capital are directly or indirectly related to the oil and gas industry. In addition, several international oil companies have their offices in Stavanger. At the same time, as other coastal cities, Stavanger is exposed to sea level rise and extreme weather events, which require climate change mitigation and adaptation measures. These same measures can, in turn, negatively impact the local economy, especially those following international policies to curb carbon emissions from consumption of fossil fuels. Hence, Stavanger can exemplify how certain socio-economic conditions together with geographical characteristics shape the context and influence local responses to unwanted consequences of climate change. Moreover, Stavanger is a pacesetter in climate change adaptation (Stavanger Municipality, 2019c). Diez et al. (2016) argue that climate change adaptation in general is a risk-based policy response to climate change. Hence, Stavanger is a suitable site for the study of a risk-based securitization of climate change produced by governmental power. Finally, the responsibility for climate change adaptation is in the case study located with the department of contingency planning and societal development. The case study therefore illustrates how climate change adaptation is handled by the local civil protection system.

The remainder of this paper has six parts. (1) In the following section, we discuss the securitization of climate change and relate it to risk logic. (2) Then, we describe the methodology we followed in proceeding with the case study, elaborate on the analytical categories of political discourse, actors, and tools and report the ways in which the data was selected and collected. (3) We present the manifestations of risk logic in the case study of Stavanger. (4) We discuss research question 1. How climate change is securitized at the local level. The findings center on the allocation of climate change adaptation with the department of contingency planning and societal development, national-level justifications for risk logic, and the empowerment of risk actors. (5) We discuss answers to research question 2. How does the securitization of climate change in local government affect responses to climate change and democratic deliberations? (6) We conclude the paper.

2. Theoretical background: securitization of climate change and risk logic

In this section, we start by presenting the foundational premise needed to investigate the politics of climate risk management in local government through a securitization lens. Next, we discuss securitization and introduce von Lucke's (2020) categories of securitization of climate change. Finally, we recontextualize the

concept risk logic (Corry, 2012) which in this study is applied instrumentally in the context of a risk-based securitization of climate change produced by governmental power (von Lucke, 2020).

A premise of our case study of the politics of local climate risk management is that a risk approach to unwanted consequences of climate change does not suddenly materialize at a given level of government. Climate change provides the original phenomenon, and when this phenomenon meets risk conceptualizations and practices, a translation takes place. Other translations of unwanted futures such as climate change include dangers, threats, unsustainability, and uncertainty, and politics is often vested in the precise shape of these concepts and the management programs they entail (Berling et al., 2021). The translation can point to new meanings of climate change or reconfigure an original meaning, but most importantly for this context, the translation prescribes ways of making climate change governable. Moreover, climate risk management is not exempt from the political nature of government. When climate risk management enters government practice, it becomes political in three ways. First, it involves a particular way of seeing the future and governing the world accordingly that citizens are then subjected to. Second, a risk approach entails deeming certain objects to be worthy of protection with suggested means of doing so. Third, climate risk management can draw boundaries for bureaucratic and political processes and imposes both limits and necessity on these processes.

Securitization is the political process by which an unwanted future is translated into a security or risk issue (Wæver, 1995; Buzan et al., 1998; Balzacq, 2014; Berling et al., 2021). In their seminal book *Securitization: A framework for analysis* Buzan et al. (1998) developed the concept of securitization to explain the political process behind the expansion of security that took place after the Cold War from the military sector into other sectors of society such as the environment and the economy. They argue that what unifies security in the military sense, and for example environmental security, is that through a speech act, an unwanted future is presented as an existential threat to a referent object with a legitimate claim to survival. A relevant example of such a speech act is the following statement by United Nations Secretary-General Guterres: “IPCC Working Group 1 Report is a code red for humanity. The alarm bells are deafening, and the evidence is irrefutable: greenhouse gas emissions from fossil fuel burning and deforestation are choking our planet and putting billions of people at immediate risk” (United Nations Secretary-General, 2021). In this utterance, “the planet” and “people” are referent objects that are threatened, and greenhouse gas emissions is the referent subject.

In securitizations of climate change, the referent object can vary, and observed referent objects include the state/territory, individual/human security, and the ecology (McDonald, 2013, 2021; Diez et al., 2016). The referent object can direct the outcome of the securitization process by determining what is worthy of protection (McDonald, 2013, 2021). For example, a securitization of climate change with the state/territory as referent object can lead to undemocratic measures that protect the state, but do not necessarily result in meaningful climate action (Diez et al., 2016). In contrast, McDonald (2021) argues that the referent object of climate

security should be the ecology, as it can lead to genuine climate action where ecological systems are protected.

The original securitization framework postulates that the benefit of a security speech act is that it allows for extraordinary measures that constitutes a break from normal governance (Buzan et al., 1998). Political discourses on climate change are persistently tied to security conceptualizations (McDonald, 2012), yet the implementation of extraordinary measures as described in the original securitization framework remains elusive (Floyd, 2013, 2016; von Lucke, 2020; Wæver, 2022). Studies of securitizations of climate change suggests that linking climate change to security conceptualizations can lead to the adoption of policies that may not otherwise have been implemented (Diez et al., 2016; von Lucke, 2020). However, this necessitates a broadening of the securitization framework beyond its original formulation, a position we follow in this analysis.

Moreover, empirical case studies demonstrate that securitizations do not necessarily involve public speech acts or a state of exceptionality constituting a break from normal governance (Bigo, 2002; Aradau and Munster, 2008; Salter, 2008; Trombetta, 2008, 2021; Bengtsson et al., 2018; Maertens, 2018). For example, refugees have been translated into migrants who pose a threat to intrastate security through bureaucratic practices (Bigo, 2002; Bourbeau, 2014). Particularly risk considerations can be integrated through routine bureaucratic practices (Aradau et al., 2008). The ensuing broadening of securitization has occurred in parallel with general developments in contemporary society, where boundaries between sectors are blurring, and interdisciplinary means are increasingly resorted to in handling complex unwanted futures, where enemy states, climate change, pandemics, and terrorism intersect (Berling et al., 2021). These developments make it increasingly difficult to establish what constitutes a break from current normal governance.

The expansion of security is a consequence of the governmentalization of security (von Lucke, 2020). Security has historically been a top-down practice produced by sovereign power to defend territory relying on conventional security actors such as the military and the use of extraordinary measures, but additional forms of state power has emerged producing other security practices. The governmentalization of security has paved the way for the securitization of climate change to be produced by three discrete forms of power, namely sovereign, disciplinary, and governmental power (von Lucke, 2020). These three forms of power correspond to von Lucke's (2020) categories of securitization of climate change. The configuration of these forms of power varies across sites and produce distinctive climate security discourses, actor constellations, and implementation of tools which means that the securitization of climate change can vary between cases, and likewise the effects and side-effects.

In this paper, we argue that governmental power is the most relevant mode of power for studying securitization of climate change at the local level in a Nordic country. Governmental power produces a securitization of climate change that operates through risk management and relies on social-scientific knowledge to pre-empt problematic developments through discreet influence of population dynamics (von Lucke, 2020, p. 24). See Table 1 for an overview of the characteristics of securitization of climate

TABLE 1 Securitization of climate change produced by governmental power.

Security concepts	Characteristics of response	Discursive power effects
Risk, risk management, riskification, scenario planning, resilience, risk-groups, risk assessment, uncertainty, contingency planning, precautionary principle, early warning systems	Climate change is securitized indirectly, using risk conceptions and focusing on the macro-level. Statistical construction of future risk areas. Safety is a function of the referent objects where measures are taken based on probabilities of unwanted consequences. Tools are risk and vulnerability analysis with an acceptance of a general degree of uncertainty. Target: population, risk groups/areas, diffuse, unspecified	Transformation of the debate and governance practices Increasing surveillance of risk areas, “normalization” processes, long-term measures, bringing risks down to a tolerable level, focusing on precautionary measures, reducing vulnerability of certain risk areas through physical adaptation measures, focusing on cost-efficient measures that do not interfere too much, acting at the population level, empowering a broad spectrum of non-state actors Exemplary policies Risk management approaches (risk maps, early warning systems), risk and vulnerability analysis, creation of climate risk areas and development of appropriate policies to prepare/insure risk groups/areas

Adapted from von Lucke (2020, p. 38).

change produced by governmental power. Sovereign power, which involves national security and/or territorial security conceptions, is not relevant since our unit of analysis does not have any mandate or responsibility for territorial defense. Disciplinary power, which often dominates in development contexts where the target of disciplining is the Global South (von Lucke, 2020), is also not applicable to our case study since the unit of analysis is the local level in a Nordic country. Therefore, we rely on the category of risk-based securitization produced by governmental power in the following analysis of our case study.

Securitization of climate change produced by governmental power intersects with discussions on the riskification of climate change (Corry, 2012; Diez et al., 2016). Riskification is a concept derived from securitization literature which specifically address the political process of translating an unwanted future state or event into a risk issue. Corry (2012) uses riskification to account for the influx of risk practices into the management of security issues and grasp the consequences of this trend (Lund Petersen, 2012; see also Heyerdahl, 2022). The main difference between von Lucke’s (2020) categories of securitization of climate change and riskification of climate change is that von Lucke (2020) moves from unfolding the functioning of the phenomenon to include what mode of state power produces it, and other variations of securitization of climate change, by including a Foucauldian power perspective. However, the characteristics of riskification of climate change and securitization of climate change produced by governmental power are similar. Therefore, we understand the riskification of climate change, and a risk-based securitization of climate change produced by governmental power as the same empirical phenomenon.

To study the securitization of climate change produced by governmental power in our case study, we have recontextualized the concept of risk logic¹ from the riskification literature to von Lucke’s (2020) categories of securitization of climate change. The purpose is to instrumentally use risk logic to gain insight into how climate change is securitized at the local level. We define risk logic as the translation of unwanted consequences of climate change into climate risk together with the actions and use of tools influenced by the discipline of risk analysis thereby entailed. Any logic of a practice related to the provisioning of security and safety has the following two main elements (Balzacq, 2014). The first relates to the conditions or contexts that makes the practice possible and valuable (Ciută, 2009; Balzacq, 2014). The second element is rule-like actions across contexts (Corry, 2012; Balzacq, 2014). The former part of the definition, which refers to the translation of unwanted consequences speaks to the conditions or contexts that make a practice possible and valuable (Ciută, 2009; Balzacq, 2014), as these conditions are a prerequisite for the translation of unwanted consequences of climate change into climate risk. The latter part of the definition speaks to rule-like actions across contexts, which we specify as actions and application of tools influenced by the academic discipline of risk analysis. Tools are included in the definition because, in the words of Bigo and Tsoukala (2008, p. 8) “the use of technologies which unifies different objects under the same logic of surveillance and control, and the political use of these technologies as if they were the only possibility to resolve the question and to remove the uncertainty which is at the heart of modern life” is a key aspect of making an unwanted future governable as a risk.

Risk logic has three characteristics (Corry, 2012). First, with a risk logic, there is no longer a direct relationship between an existential threat and security. In comparison to security threats such as terrorism, risks are more diffuse. Second, the actions to be taken are to govern the conditions of the possibility of harm. Third, with a risk logic, emergency is replaced by a governmental policy response entailing long-term societal engineering. Societal engineering is inherent to risk management, which seeks to permanently filter non-acceptable risks away through innovation, governance, and cooperation. According to Corry (2012) effects of risk logic are multiple referent objects that are deemed worthy of

1 Corry (2012) introduced risk logic alongside the concept of riskification to argue that claims that climate change has been securitized are incorrect, and instead, climate change has been riskified. According to Corry (2012) securitization processes follow a security logic of emergency and urgency, while riskification processes follow a risk logic according to the three characteristics described in this paper. However, Corry derived the characteristics of risk logic from differences between how climate change is securitized and how more traditional security concerns have been securitized. While we concur that climate change seldomly is handled according to a traditional security logic of emergency, we do object to the claim that securitization and riskification are two separate phenomena. Rather, we see securitization and riskification as variations of the same phenomenon influenced by properties of the issue that is securitized (Trombetta, 2008, 2021; Oels, 2012; von Lucke, 2020), the scale where securitization happens (Berling et al., 2021), and the mode of power a securitization can be produced from von Lucke (2020).

protection and a second-order politics where safety is a function of the referent object.

The translation of unwanted consequences of climate change into climate risk entails operationalizing these in terms of outcomes, consequences, and associated uncertainties of activities with respect to something that humans value (Aven, 2020). The academic understanding of risk has developed from a view of risk as measured uncertainty (Knight in Rosa, 1998) to one of risk as a product of uncertainty and consequences for something humans value (Aven and Renn, 2009, 2010; Aven et al., 2011). The importance of this conceptual shift is that uncertainty can be measured or estimated, but this is not a requirement for the existence of risk (Aven, 2020). The characteristics of a risk furthermore prescribe the appropriate risk management strategy (Renn, 2008; IRGC, 2017; Aven, 2020). Regardless of the analytical advancements in the academic discipline of risk analysis, local government in Norway conceptualizes and handles climate risk by calculating risk and then acting (Aall and Groven, 2022). Thus, in the unit of analysis, uncertainty is still predominantly understood as measured uncertainty in the form of probability and potential consequences (see also Orderud and Naustdalslid, 2018).

According to Salter (2008), calculations of uncertainty make an imaginary danger real. Salter further argues that the quantification of risk depoliticizes government processes because this is a professional strategy that “managers of unease” adopt to expand their business rather than a strategy that a government takes to resolve a risk. Similarly, Lidén (2022) has observed a depoliticizing effect of risk analysis with reference to National Risk Assessments. These assessments are technocratic exercises that may lead to reduced political deliberation regarding security risks. We expect that the calculation of climate risks can produce comparable effects in local government, where an issue becomes dependent on expert knowledge, and the calculation process makes the issue less accessible to democratic deliberations on the part of decision-makers. Although the effect of risk calculations can be the depoliticization of an issue, this method is innately political, as it limits choices available to decision-makers and establishes a necessity.

The translation of unwanted consequences of climate change into climate risk directs everyday activities and organizes them. The supreme action that follows from the translation of unwanted consequences of climate change to climate risk is risk analysis. Here, we refer to the broad definition of risk analysis as risk assessment, risk characterization, risk communication, risk management, and policy relating to risk (Society for Risk Analysis, 2018). These activities have a structured and strategic quality. For instance, when a municipal employee removes leaves from drains in public spaces, this is not necessarily a manifestation of risk logic at the local level but rather a continuation of a longstanding practice in municipal operations. However, if that employee removes leaves from drains as a risk management measure that is implemented after a risk and vulnerability analysis (RVA) has identified the importance of clear drains to minimize the risks caused by extreme weather events, it becomes a manifestation of risk logic. Hence, a structured and strategic risk practice is shaped by the academic discipline of risk analysis (Aven, 2020; Aven and Thekdi, 2021). However, in an empirical study of climate risk, various professions,

and their various disciplines may interact, each of which may have its own risk understanding and operationalizations. Understanding the nuances at play in these concepts is vital for explaining the politics of climate risk management because “Professions and disciplines are organized around a body of knowledge that serves various purposes for society in regulating social resources, drawing boundaries and reproducing social structures both internally and in relation to outsiders” (Berling et al., 2021).

3. Methodology

The case study is of the municipality of Stavanger, a frontrunner in climate change adaptation. In 2019, Stavanger was selected as the best prepared municipality for climate adaptation in Norway (Stavanger Municipality, 2019c). Stavanger is located on the southwestern coast of Norway and has ~144,000 inhabitants (Stavanger Municipality, 2022), making it the fourth-largest municipality in the country. It is situated on the North Sea coast and includes a mainland area, which contains the city center, and 37 islands. Settlements in this municipality are exposed to torrential rain, storm surges, extreme wind, sea level rise, surface water issues, droughts, and temperature rises (Jansen et al., 2022). Stavanger is the capital of Norwegian oil production, and a significant number of the area’s employers and amount of capital are directly or indirectly related to the oil and gas industry, making the local economy susceptible to policies to curb carbon emissions from consumption of fossil fuels. In the municipality of Stavanger, the strategic responsibility for climate change mitigation resides with the department of climate and environment, while the strategic responsibility for climate change adaptation resides with the department of contingency planning and societal development. However, the responsibility for implementation of mitigation and adaptation measures lies with all departments. See Figure 1 for an organizational chart of the municipality.

The research design answers a call from Berling et al. (2021) for empirical studies that focus on bureaucratic cases and practices of translation of unwanted futures while at the same time paying attention to discourses and concepts.² Moreover, the research design relates directly to our definition of risk logic as the translation of unwanted consequences of climate change into climate risk together with the actions and use of tools influenced by the discipline of risk analysis thereby entailed. In this case study, we sought manifestations of risk logic in the three analytical categories of political discourse, actors, and tools. An analysis of political discourses speaks to the importance of discourse and concepts in

² The three main approaches to an empirical study of securitization processes are to understand it (i) as a speech act observed through discourse analysis, (ii) as a practice professional managers of security and risk embedded in bureaucratic routine, and (iii) through the lens of Actor-Network Theory, as used in science and technology studies which has an emphasis on the use of technologies and tools (Berling et al., 2021). These three approaches also represent different directions in the securitization literature. We draw inspiration from all three, using political discourse, actors, and tools as analytical categories, but we limit the methods applied in the case study to political discourse analysis and interviews.

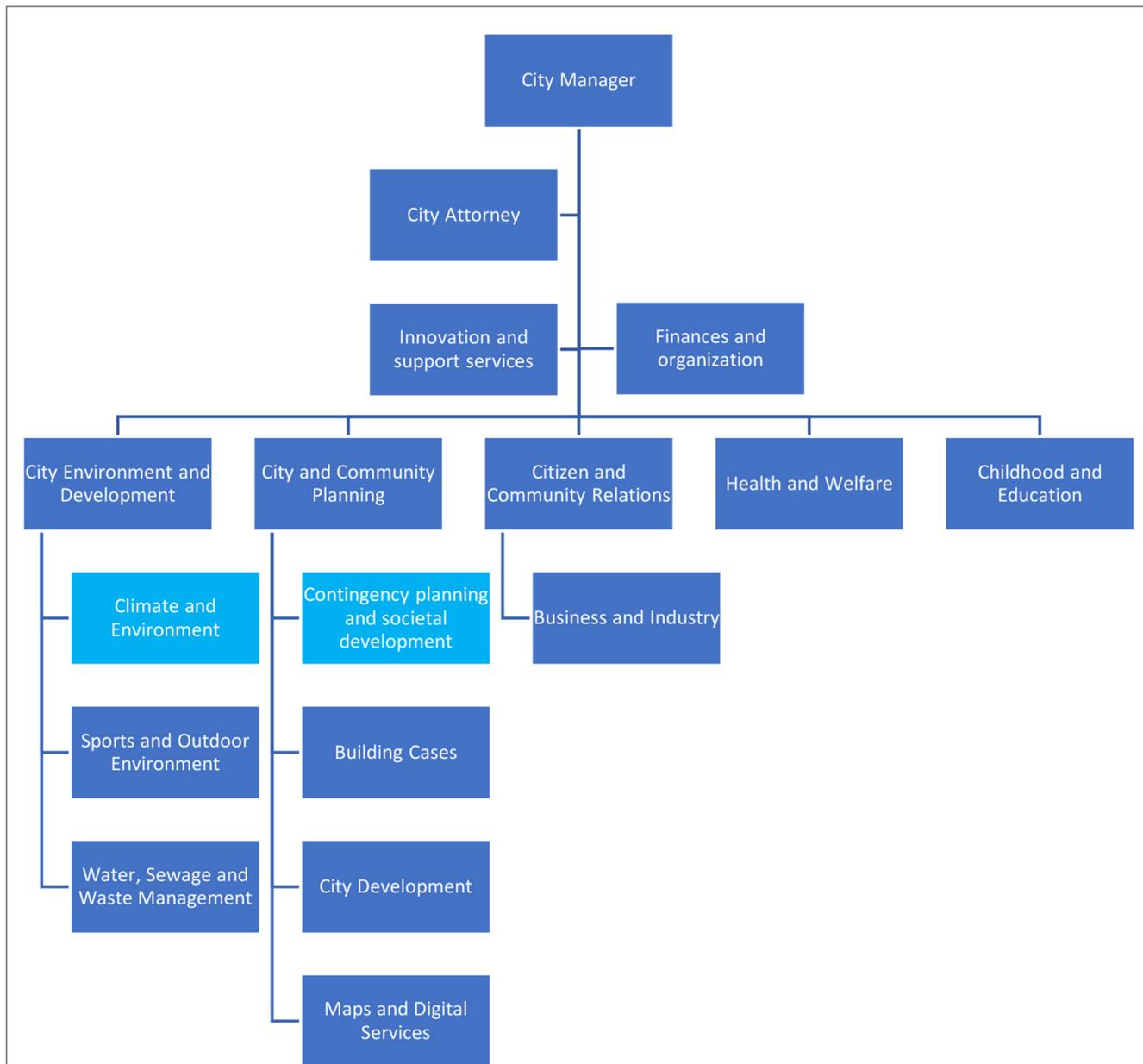


FIGURE 1 Divisions in the municipality of Stavanger (Stavanger Municipality, 2023) and the departments most actively involved in handling climate change. The departments with strategic responsibility for climate change mitigation and adaptation have been highlighted.

the translation of an unwanted future, and thereby the first part of our definition of risk logic. Investigating actors and tools speaks to bureaucratic routines, and the second part of our definition of risk logic which is about actions and tools influenced by the discipline of risk analysis. We assume that professional risk actors conduct actions influenced by the discipline of risk analysis.

We used political discourse analysis to identify and describe the concepts and discourses of unwanted consequences of climate change. Political discourse analysis is the analysis of practical argumentation for or against one or another action or inaction used in decision-making processes in political systems (Fairclough and Fairclough, 2012). We selected four top-level strategic documents and one specific analysis of climate risk: (1) The Municipal Master

Plan, divided into (a) a societal part (Stavanger Municipality, 2020) and (b) an area development strategy (Stavanger Municipality, 2019b), (2) The Climate and Environment Plan 2018–2030 (Stavanger Municipality, 2018), (3) The Industry and Business Development Strategy 2021–2030 (Stavanger Municipality, 2021), (4) Holistic Risk and Vulnerability Analysis 2020 (Stavanger Municipality, 2019a) and (5) Report: Analysis of Climate Risk for a Selection of Municipalities (Proactima The Governance Group, 2021). In total, 443 pages of official documents were analyzed. The rationale for focusing on strategic documents is that the political discourse used in these documents set the direction for more detailed plans and policies. (5) Report: Analysis of Climate Risk for a Selection of Municipalities was included because

this document speaks directly to the translation of unwanted consequences of climate change into climate risk and expounds the measures prescribed.

The documents were coded using Nvivo. To identify manifestations of risk logic we searched for the following risk words: contingency, preparedness, safety, risk, long-term, uncertainty, statistics, prevention, probability, crisis management, scenario, resilience, diffuse, precautionary, manageable (revised from Diez et al., 2016, p. 16). When the risk words listed were identified in a document, we analyzed how they relate to the subject of the sentence in which they appear to extract the practical arguments in which risk words are found.

We include actors as an analytical category to identify those who are active in the management of unwanted consequences of climate change. We consider that those who produce strategies concerning climate risk and those competent to manage risk, such as contingency planners, preparedness managers, resilience engineers, risk consultancies, and suppliers of risk tools, to be risk actors. These actors are part of a profession that brings forth risk practices. Climate change adaptation has, since the early 2000's, been integrated into the civil protection system in Norway (Groven et al., 2012), and the involvement of risk actors in the response to unwanted consequences is therefore in general not new. In our analysis of risk actors, we have not ascribed motives and meanings to the actors that they had not expressed themselves, in accordance with guidelines for ethical research in the social sciences (The National Committee for Research Ethics in the Social Sciences the Humanities, 2021).

We defined risk tools as tools used to manage climate risk and uncertainty related to the consequences of climate change, such as, for instance, risk modeling, RVAs, risk-benefit analyses, and risk maps. Some of these tools are digital tools or rely on digital technology, such as map systems, or on the surveillance of risk areas. Other tools, including RVAs, may not be digital. RVAs are a challenge to our analytical categories because they are part of political discourse, a practice related to risk actors and a risk tool. For example, two of the documents selected for political discourse analysis are RVAs: (4) Holistic Risk and Vulnerability Analysis 2020 (Stavanger Municipality, 2019a), and (5) Report: Analysis of Climate Risk for a Selection of Municipalities (Proactima The Governance Group, 2021). Moreover, we discuss the actors involved in cyclical RVA processes, and we also discuss RVAs as a risk tool that can be used separately from a given political discourse and risk actors. RVAs permeate local government's response to unwanted consequences of climate change, and we argue that examining them from multiple angles provides a deeper analysis of the politics of local climate risk management.

To support our findings on political discourses and to enrich our data regarding actors and tools involved in bureaucratic routines and processes on unwanted consequences of climate change, we conducted semi-structured interviews with eight informants. The informants included the employees with strategic responsibility for climate change mitigation and climate change adaptation, and a set of employees that worked with development and implementation of adaptation and climate risk measures. In addition to employees of Stavanger Municipality, two of the informants were employees of a risk consultancy that works closely

with the municipality. The informants were interviewed in six interviews: four interviews were with individual informants and two interviews were with two informants together. The interviews ranged from 1 to 2½ h. The interviews followed the three analytical categories political discourses, actors and tools. To uncover political discourses on unwanted consequences of climate change we asked the informants how they would define the issue. Moreover, we asked for definitions for words they used to describe the issue in their work and what their references were. To identify risk actors we asked about the informants' networks. As for tools, we asked about which policies and strategies were most important for the work of the informants, and what other tools they used in their work (see Appendix 1 for the interview guide).

4. Risk logic embedded in bureaucratic routines

The presentation and discussion of the findings follow the three analytical categories of political discourses, actors. Overall, it is observed that unwanted consequences of climate change are translated to fit into pre-existing bureaucratic routines for risk handling and organizational and professional functions, and they have a fortifying effect on these.

4.1. Political discourses: national level justification for risk logic at the local level

The analysis of political discourses exhibits a risk discourse on unwanted consequences of climate change in Stavanger embedded in a bureaucratic discourse. The risk discourse is tightly connected with the civil protection system and dominates in documents produced by the department of contingency planning and societal development. The risk discourse's main features are a presentation of climate change as a risk to society and individuals. Climate change is a referent subject, and individual safety and health are the dominant referent objects. However, the economy and nature are also referent objects, although less prominently. In the risk discourse, climate risk should be acted upon with processes and activities to manage its consequences and uncertainties.

Risk discourse was mainly present in (1b) The Municipal Master Plan's Area Development Strategy, (4) Holistic Risk and Vulnerability Analysis 2020, and (5) Report: Analysis of Climate Risk for a Selection of Municipalities. See Table 2 for an overview of identifications of risk words. Risk words were also found in (2) the Climate and Environment Plan 2018–2030, but risk words in this document appeared in a chapter on climate change adaptation and were related to contingency planning. In (1b) The Municipal Master Plan's area development strategy, risk words resonated with national regulations on area and building planning, where RVA is a required tool in spatial planning processes (Ministry of Local Government Regional Development, 2022). (4) Holistic Risk and Vulnerability Analysis 2020 contained a high concentration of risk words: 28 of the 58 unwanted events described in the holistic RVA were connected with climate change. The deep uncertainty in relation to climate risk was underlined. In an interview, an

informant (Interview 1, 2022) indicated a wider scope for climate risk than what was explicitly stated in (4) Holistic Risk and Vulnerability Analysis 2020 and estimated that around 40 of the 58 unwanted events described could be caused by climate change.

(5) Report: Analysis of Climate Risk for a Selection of Municipalities provided the most comprehensive and detailed description of climate risk at the local level and applied this concept to identify and analyze the specific climate risks that Stavanger Municipality faces. The analysis was conducted by two external consultancies and was funded by the Norwegian Environmental Agency (Proactima The Governance Group, 2021). The Norwegian Environmental Agency required that this analysis follow the conceptualization of climate risk proposed in the 2018 Official Norwegian Report Climate Risk and the Norwegian Economy (Interview 6, 2022), and it therefore divided climate risk into physical risk and transition risk. Physical risk is “risk associated with the implications of physical changes in the environment” (Ministry of Finance, 2018). Transition risk is “associated with the implications of climate policy and technological developments upon transition to a low-emission society” (Ministry of Finance, 2018). Part of (4) Holistic Risk and Vulnerability Analysis 2020 provides the analysis of physical risk in (5) Report: Analysis of Climate Risk for a Selection of Municipalities. The Stavanger region carries a high transition risk, as a large part of the economy is based on oil and gas production in the North Sea. Transition risk “thus adds new risks to the municipalities’ overall risk picture” (Proactima The Governance Group, 2021).

The main feature of the bureaucratic discourse was that climate change is a problem that can and should be addressed and resolved within current bureaucratic mandates and by dividing responses according to sectoral departments, such as the Department of Contingency Planning, the Department of Water Management and Drainage and the Department of Roads and Parks.

Despite the manifestation of risk logic in a risk discourse on unwanted consequences of climate change, the risk discourse does not invoke danger to justify new policies at the local level. Indeed, in Norway, the Civil Protection Act (Ministry of Justice Public Security, 2010) provides legal justification for a risk logic that is manifested in contingency planning at the local level. The Civil Protection Act establishes multiple referent objects that need to be protected by the municipality during peace time such as life, health, the environment, material values, and critical infrastructure against whatever might pose a threat or risk to these objects (Ministry of Justice Public Security, 2010). This finding concurs with Corry’s (2012) argument that risk logic entails multiple referent objects. Moreover, the Civil Protection Act demands that all municipalities provide a holistic RVA covering unwanted events that may occur, assess the probability of these events, and map their potential consequences (Ministry of Justice Public Security, 2010). The Norwegian Directorate for Civil Protection and Emergency Planning issues official guidance on holistic RVAs. The most recent guidance for local governments suggests that “climate change and security crises or armed conflicts are themes that can affect both risk and vulnerability” and “methodologically this [climate risk] can be solved by adding a climate factor to the chosen event” (Directorate for Civil Protection Emergency Planning, 2022). Consequently, there is no need to invoke threats or risks caused by climate change on the local level to justify the translation of unwanted

consequences of climate change into climate risk and actions related to contingency planning.

The Planning and Building Act (Ministry of Local Government Regional Development, 2022) provides a legal justification for risk logic in the context of spatial planning. According to this act, municipalities must take current and future climate into account in their societal planning, area planning, and consideration of building applications (Ministry of Local Government Regional Development, 2022). Moreover, the Planning and Building Act demands that RVAs are completed for zoning areas. For the purposes of spatial planning, there has in Stavanger been a push toward requiring prediction of the effects of climate change to produce preventive effects by building risk away. One informant stressed that detailed climate predictions were essential to climate risk management because “if it gets too general ... we do not get the effect” (Interview 1, 2022 own translation). This push to produce fine-grained climate predictions and calculations can conflate the deep uncertainty of climate change with highly predictable risks, echoing Orderud and Naustdalslid’s (2018) and Aall and Groven’s (2022) research on the understanding of climate risk and uncertainty in the context of Norwegian municipalities. However, the theoretical background directed us to investigate this conflation as an effect of the politics of climate risk management, and specifically the bureaucratic division of responsibilities, which we elaborate on in the following subsection.

The interviews did not provide any additional political discourses, but seven of the eight informants expressed general doubt about whether existing local policies and practices would be sufficient to address climate change (IPCC, 2014; Interview 1, 2022; Interview 3, 2022; Interview 4, 2022; Interview 5, 2022). An example to illustrate this can be seen in Stavanger’s efforts to reduce emissions. While the political target is to reduce 80% of direct emissions by 2030, the action plan for emissions reduction only targeted an 11% reduction, and this was the most that Stavanger was able to generate in direct emissions reductions (Interview 4, 2022). The expressed doubts and this gap between adopted climate policies and implementation could point to an awareness of the weakness of the current handling of climate change at the local level.

4.2. Risk actors: climate risk management is an issue for contingency planning and spatial planning

There are three groups of actors in this case study that represent manifestations of risk logic: the municipality’s own contingency and preparedness employees, risk analysts and scientific communities. The first group has generic knowledge of and the skills necessary to work with risk management but rely on the second and third group’s expertise in the management of climate risk.

Climate change adaptation emerged as a policy area in Stavanger in the mid-2000s (Interview 1, 2022). When the issue emerged, the department of contingency planning and societal development argued that climate change adaptation should be given its own foundation as a policy area separate from climate change mitigation to ensure that it was not relegated to a

TABLE 2 Frequency of risk words indicating degree of risk logic present in case documents.

	(1a) Municipal master plan societal part	(1b) Municipal master plan area development strategy	(2) The climate and environment plan 2018–2030	(3) The industry and business development strategy 2021–2030	(4) Holistic risk and vulnerability analysis 2020	(5) Report: analysis of climate risk for a selection of municipalities
Contingency and preparedness	0	13	2	1	51	26
Diffuse	0	0	0	0	0	0
Prevention	0	1	0	0	10	7
Precaution	0	0	0	0	0	0
Manageable	0	0	0	0	5	0
Crisis management	0	0	0	0	16	2
Long-term	0	0	4	0	2	20
Resilience	0	0	0	0	0	0
Risk	0	28	3	0	89	1002
Probability	0	0	0	0	21	16
Scenario	0	0	0	0	0	123
Safety	1	21	2	0	20	23
Statistics	0	0	4	0	1	2
Uncertainty	0	0	1	0	2	101
Total risk words per document	1	63	16	1	217	1,322

lesser role as the “little brother” of mitigation efforts (Interview 1, 2022). The argumentation suggested that the department of contingency planning and societal development should have the strategic responsibility for climate change adaptation rather than the department of climate and environment, and in 2007 this was implemented. This appears to have been key to the subsequent translation of unwanted consequences of climate change into climate risk together with the actions and use of tools influenced by the discipline of risk analysis thereby entailed. An effect of this decision was that there have been many risk analyses conducted that take the future climate into account, but there has been no political plan for climate change adaptation (Interview 4, 2022). Motivations for securing the strategic responsibility for climate change adaptation beyond what is described was not explicated in interviews. However, a benefit of receiving the strategic responsibility for climate change adaptation is that the department of contingency planning and societal development has access to more funds to commission risk analyses, for example through a national climate change adaptation network.

The municipality uses consultancies to support its risk analysis capacity. For instance, one consultancy led the process for and wrote (5) Report: Analysis of Climate Risk for a Selection of Municipalities together with a second consultancy, as well as facilitating the process related to (4) Holistic Risk and Vulnerability Analysis 2020. Another consultancy has developed a cost-benefit analysis for climate change adaptation (COWI, 2017) and a cloudburst plan (COWI, 2022) for Stavanger. In

building applications, other consultancies are involved in the production of risk analyses on the behalf of property developers. Risk calculations are also included in engineering processes related to the development of Stavanger’s infrastructure and urban areas. Introducing considerations of climate change is a business opportunity for risk consultancies (Interview 6, 2022).

Drawing on partnerships with the relevant scientific communities, knowledge predominantly related to the natural sciences is generated to reduce uncertainty. Ideally, the municipality would obtain predictions from scientific communities with reference to the future climate at a high level of detail. The inclusion of scientific knowledge can enhance the quality of the basis for decision making and risk characterization can contribute to appropriate risk management (Aven, 2020). However, as noted in the theoretical background section, the knowledge acquired from professional risk analysts and scientific partners can have a depoliticizing effect on a given issue (Salter, 2008; Lidén, 2022). We presume that, as the knowledge that forms basis for decision making becomes increasingly advanced, it forms a barrier preventing decision makers from assessing the assumptions behind analyses and engaging with the kind of future that is assumed. Indeed, one informant (Interview 1, 2022) shared that after procuring an analysis of future climate effects in Stavanger that contained climate predictions, the document was sent to an equivalent research institution for review as the climate models it contained were too complex for municipal employees to assess. When obtained knowledge is too complex

for administrative employees to assess, it seems unlikely that local political decision-makers can meaningfully envision or deliberate on the presented future.

Indeed, none of the interviews identified or emphasized inclusion of politicians or citizens in local climate risk management (Interview 1, 2022; Interview 2, 2022; Interview 3, 2022; Interview 4, 2022; Interview 5, 2022; Interview 6, 2022). In this case study, risk logic appears to produce similar effects as those that Salter (2008) has observed for risk calculations and Lidén (2022) for National Risk Assessments. Climate risk management takes the shape of a technical exercise.

We wrote above that national regulations, like the Civil Protection Act and Planning and Building Act, provide the needed legal justification for risk logic at the local level. At the same time, these acts also pave the way for an apparent inconsistency. The invocation of climate risk in relation to contingency planning and preparedness accentuates the deep uncertainty involved. The function of contingency planning and preparedness is to support the provisioning of safety and security for citizens, and through professional risk analysts, this function is influenced by the discipline of risk analysis. When climate risk is invoked in spatial planning, the future climate is predicted, and risk is calculated with the aid of highly sophisticated climate prediction models. Spatial planning is conducted to create and recreate the built environment, and the creation of physical structures is highly dependent on calculation. In climate risk management, these two functions and related disciplines and professions meet, and their boundaries can appear blurred. However, this did not necessarily lead to a single uniform conceptualization of climate risk in this case study. Rather, the deep uncertainty entailed by climate risk in contingency planning forms a driver for enhanced knowledge of the future climate. Consequently, additional analyses are requested and produced. Precise predictions and calculations are considered to be essential content of these analysis (Interview 1, 2022). As Salter (2008) observes regarding risk calculations, these climate predictions and calculations may have the effect of making a certain future real. The calculations are then used in spatial planning to prevent climate risk. In this way, risk logic leads to long-term societal engineering.

For the analysis of the case study, it was also insightful to investigate where risk logic did not manifest. Municipal employees from a wide range of departments were involved in the development of (4) the Holistic Risk and Vulnerability Analysis 2020 and (5) Report: Analysis of Climate Risk for a Selection of Municipalities. Some of these employees worked with strategies related to climate change, such as (2) Climate and Environment Plan 2018–2030 and (3) Industry and Business Development Strategy 2021–2030. Although these employees were familiar with risk logic through working on (4) the Holistic Risk and Vulnerability Analysis 2020 and (5) Report: Analysis of Climate Risk for a Selection of Municipalities, they did not incorporate risk discourse in (2) the Climate and Environment Plan 2018–2030, (3) Industry and Business Development Strategy 2021–2030 or our interviews (Interview 3, 2022; Interview 4, 2022); nor do they use risk tools in their tasks related to climate change (Interview 3, 2022; Interview 4, 2022; Interview 5, 2022). It appears that the adoption of risk logic was shaped by pre-existing organizational structures, practices, and professions. We argue that risk logic in

local government manifests where it can be affixed to existing bureaucratic routines without challenging the status quo.

4.3. Risk tools: essential instruments to make unwanted consequences of climate change governable

The main risk tools identified in this case study are RVAs, a digital climate dashboard, projects to develop knowledge to reduce uncertainty, zoning and area plans, and a risk-benefit analysis.

RVAs are used across a range of competence areas and involving several scales from the Stavanger (4) Holistic Risk and Vulnerability Analysis 2020, which involves all possible major unwanted events in the municipality, to the planning of a single plot. Recently, RVAs have enabled the municipality to discipline real estate developers and municipal employees into taking climate risk into account (Interview 1, 2022). Previously, building dispensations from area plans and regulations were sometimes granted without the need for an RVA that took future climate into account. Nowadays, it is routine that no dispensations are allowed without the minimum of an RVA that also includes an assessment of climate risk. Employees who work with unwanted consequences of climate change but did not use risk discourse or qualify as risk actors were well-acquainted with RVAs in general (Interview 3, 2022; Interview 4, 2022; Interview 5, 2022). We suggest that this indicates that risk tools such as RVAs are not necessarily dependent upon risk discourse or risk factors for use by municipal employees.

The concept and word climate risk can be introduced by risk tools. One informant explained that the climate risk conceptualization was predominantly introduced by digital tools that employees used to create the basis for decision-making in relation to spatial planning, such as risk maps (Interview 2, 2022). Actors who make decisions regarding the built environment are required to imagine and assess physical climate risk, which embeds risk logic into bureaucratic routines on real-estate development.

Together with other municipalities in the region, Stavanger Municipality is involved in the development of a digital climate dashboard (Interview 1, 2022; Interview 2, 2022), which has a dual purpose: it helps predict unwanted climate related events to minimize their consequences, and it provides live information on ongoing unwanted events for crisis management. A core feature of the dashboard is that it collects various surveillance data and combine these to create a risk picture of a predicted or ongoing unwanted event. Various risk objects, from rivers to roads, are assembled in this tool. Sensors, surveillance images, weather forecasts, maps, and drone photographs are supporting technologies for the tool.

Including risk tools in the case study as an analytical category reveals that they can be used as a consequence of risk logic, but they can also convey risk logic. The creation of a climate dashboard illustrates the first point, where a new risk tool is created to bring multiple risk objects, such as rivers and roads, together for the purpose of climate risk surveillance and control. This process is aided by supporting technologies, such as sensors, drones, and cameras. The significance of these supporting technologies goes beyond the possibility of live transmission of information to

providing data allowing for the prediction and control of future unwanted natural events (Interview 1, 2022). An informant stated that the concept of climate risk had first been introduced through a digital tool (Interview 2, 2022); this illustrates the latter point, namely, that a risk tool can convey risk logic. Both effects align with Bigo and Tsoukala's (2008) observation of how risk tools work and how they are seen as a necessity for removing uncertainty. However, one informant reflected on how this necessity to bring in risk tools was paradoxical, as many of the tools are digital and therefore require significant energy to function, thereby contributing to CO₂ emissions and climate change (Interview 5, 2022). Digital risk tools also introduce new vulnerabilities, such as toward cyber-attacks (Interview 5, 2022). Consequently, risk tools do not necessarily resolve risks but can have the effect of sustaining a perpetual need for risk management.

Stavanger Municipality led or was part of 51 climate risk projects in the period 2006–2022 (Interview 1, 2022). The knowledge generated from these projects feed into zoning and area plans. For example, knowledge of torrential rain and its different consequences depending on the exact geographical locations was generated (COWI, 2022), to enhance plans and regulations on their capability to reduce climate risk. Risk tools such as RVAs, in combination with risk maps, drainage lines and cloudburst plans, are manifestations of risk logic in spatial planning. The municipality also had a risk benefit analysis produced on sea level rise and torrential rain (COWI, 2017). This document was seen as an instrument that the municipal administration could use in political processes to justify public spending if needed (Interview 1, 2022).

The standards used in building processes also convey information on the translations of unwanted consequences of climate change. Local government must use the precautionary principle for climate change adaptation, and the national recommendation is to plan for climate scenario RCP8.5 (Directorate for Civil Protection Emergency Planning, 2016). RCP8.5 is a high-emissions global warming scenario. Stavanger, however, has adopted an even stricter standard than the national recommendation for buildings facing the sea (Interview 1, 2022). It installed a sea level measuring station in 1919, and its readings were analyzed by an external partner. This analysis has led Stavanger to operate with an expected sea level rise that is 22 cm higher than the national recommendation, which follows RCP8.5 (Tømmerås, 2021). In other words, when Stavanger uses the precautionary principle, it assumes a more severe sea level rise than the official “worst-case” climate scenario. This might seem to be a technical matter but expresses a bleak future vision for the area. As research on securitizations has shown, installing political processes with necessity and limiting choices are not necessarily dependent upon public speech acts but can also happen through highly bureaucratic processes (Bigo, 2002; Aradau et al., 2008; Bengtsson et al., 2018), such as in a building standard. An unwanted future puts limits on what is permissible today rather than being a policy issue regarding how we in decisions made today create and shape a wanted future. However, we argue that there is more to this building standard. For the building standard, Stavanger municipality has a window of opportunity to enhance its efforts to limit unwanted consequences of climate change and pursue it. In contrast, despite its ambitious target of 80% direct emissions reductions by 2030, Stavanger is only

able to generate actions leading to an 11% emissions reduction due to a limited capacity to implement a locally adopted climate policy.

5. On how climate change is securitized at the local level

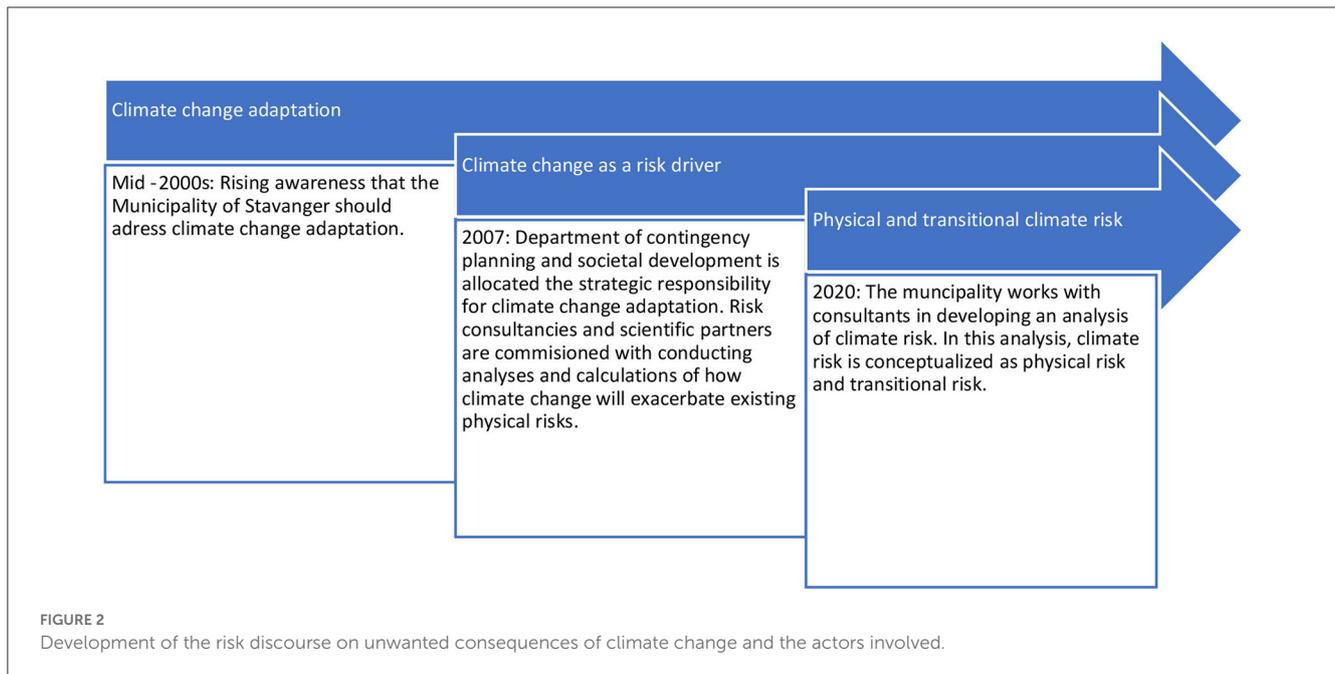
We will now use the analysis of the manifestations of risk logic to answer research question 1. How is climate change securitized at the local level? Figure 2 shows the development of the risk discourse on unwanted consequences of climate change and the involvement of risk actors.

The risk-based securitization of climate change was limited to the context of contingency planning and the wider civil protection system, rather than encompassing the entire Municipality of Stavanger. Our analysis suggests that the allocation of the policy area of climate change adaptation within the department of contingency planning and societal development was a key factor in the local level securitization of climate change produced by governmental power. This allocation was motivated by the argument that adaptation should develop as a policy area separate from climate change mitigation. The justifications for handling unwanted consequences of climate change according to a risk logic were already in place in the national framework that directly and indirectly regulates civil protection. As a result, we observed little or no politization of adaptation and climate risk management at the local level, as demonstrated by the absence of a political plan for climate change adaptation. Our findings indicate that the local civil protection system wields significant governmental power to produce the risk-based securitization of climate change in our case study, while other parts of the municipality lack this capacity.

When the responsibility for climate change adaptation was allocated to the department of contingency planning and societal development it spurred risk analyses by experts. Thus, risk analysts and scientists that provide risk analyses and calculations were empowered, and there were increased business opportunities with local government for consultancies and research institutions. The strong emphasis on experts appears to have reduced contestation as the issue is seen as a technical matter, echoing the arguments of Salter (2008) and Lidén (2022) introduced in the theoretical background section of this paper. It is possible that in a municipality where a significant portion of the local economy is tied to the oil and gas industry, emphasizing expert knowledge and depoliticization could be a more effective strategy than politization. Thus, the socio-economic features of Stavanger might have made a securitization of climate change produced by governmental power appealing to the actors involved.

An exception from the technical impression of risk analyses is the introduction of transition risk. This risk conceptualization does not play a dominant role in the case study, but it is a recent introduction, and it is yet unknown what the effects will be. When transition risk is discussed, the local economy is the referent object. One possibility is that second-order risk politics where safety is a function of the referent object could lead to a focus on reducing the climate risks of the local economy.

The securitization of climate change produced by governmental power led to a response of long-term societal engineering for spatial planning, a widespread use of RVAs and surveillance of climate



changes. Particularly, risk areas were expanded, or the riskiness perceived to exacerbate. In Stavanger, risk logic is predominantly directed at the physical aspects of climate risk, such as more extreme natural events and their impact on the built environment. However, situated on the North Sea, life by the ocean, storms and heavy rain have characterized life in the area throughout history. While climate predictions are central for the management of physical climate risks, the risks considered appear to be well-known. It is as if the approach to handling well-known flooding and storms is simply reapplied to unwanted consequences of climate change.

In general, Stavanger shows a risk logic embedded in and shaped by stable organizational structures, practices, and professions and manifests where it can be affixed to existing bureaucratic routines without challenging the status quo. Existing understanding of risks and organizational and professional functions are preserved through a translation of unwanted consequences of climate change into climate risk in a way that aligns with established contingency planning or the risk calculations used in constructing the built environment. Moreover, unwanted consequences of climate change do not trump other risks to be managed or create a state of exceptionality. Hence, this case study aligns with literature that shows how a policy issue can be translated into a risk or security issue through everyday bureaucratic routines (Bigo, 2002; Aradau et al., 2008). Even though no politization is necessary for the adoption of a risk logic on unwanted consequences of climate change, there is still a change in how a part of the policy issue of climate change is handled in comparison to before security implications were considered. This concurs with the definition of a securitization of climate change (Trombetta, 2008; Diez et al., 2016; von Lucke, 2020; Albert, 2022).

In answer to research question 1 of this paper, which asks how climate change is securitized at the local level, our case study reveals that the allocation of a part of the policy area of climate

change to the civil protection system was a key component. For the department of contingency planning and societal development, the allocation of responsibility for adaptation allowed for more risk analyses and new risk tools enhancing risk surveillance. This instigated emphasis on expert knowledge and a long-term strategy of societal engineering. The securitization of climate change produced by governmental power can take place within the bureaucracy of local government without politization, reinforcing existing risk practices.

6. On how the securitization of climate change at the local level affects responses to climate change and democratic deliberations

We answer the second research question, 2. How does the securitization of climate change in local government affect the response to climate change and democratic deliberations? with three arguments. First, the unique characteristics of unwanted consequences of climate change fade as they are translated into climate risk which is seen as a risk driver to be factored into existing and well-known risks. This contributes to a normalization of the presence of unprecedented climate change. Second, the focus on the cause of climate change diminishes, as safety is a characteristic of the referent objects. This decouples climate risk from the wider issue of climate change caused by global warming. Third, the risk-based securitization of climate change in local government had a depoliticizing effect and democratic deliberations were limited.

The unique characteristics of unwanted consequences of climate change fade when climate risk is seen as a risk driver to be factored into existing and well-known risks. This normalization of climate change fails to acknowledge the unprecedented nature

of man-made global warming, and the ensuing high degree of uncertainty about the future. The normalization of climate risk is further exacerbated by the fact that it is absorbed into established routines, practices, and meanings within the department of contingency planning and societal development, as well as partially within areas pertaining to spatial planning. This failure to recognize the need for necessary transformations and uncertainties in addressing unwanted consequences of climate change may contribute to the proliferation of risk management tools such as RVAs and surveillance, which may be insufficient for addressing the broader social dimensions of climate change and the need for more transformative actions to progress toward meeting the targets of the Paris Agreement.

The case study demonstrates how a risk-based securitization of climate change in local government can result in the response being decoupled from the larger issue of global warming. This is because safety becomes a function of the referent objects, and the focus on the causes of climate change diminishes. In the case study of Stavanger, safety from climate risk is mainly viewed as a function of the built environment and contingency planning. The climate change adaptation policies of Stavanger respond to a local problem, and the mitigation policies respond to a global problem. While a politics of protecting referent objects at the local level may be warranted due to the multilevel nature of climate change, the local level also has a responsibility to mitigate climate change. If transition risk is completely included in the risk politics, it could incite a reduction of the climate risk of the local economy and lead to climate action that decarbonizes the local economy. However, this potential to recouple climate risk with the wider issue of global warming remains unrealized thus far.

Finally, the analysis implies that the risk-based securitization of climate change in local government had a depoliticizing effect and democratic deliberations were limited. The justifications for risk logic in the case study stem from national laws and regulations, and local politicians are not the decision-makers in the development of risk logic. In addition, the expert knowledge that is used as a basis for decision making can, as discussed above, further depoliticizes the issue. External partners and consultancies are commissioned to produce climate predictions and risk analyses, while citizens and local politicians have a limited role in the process. While external partners are responsible for the quality of risk assessments, they are not responsible for providing safety to citizens. A potential side-effect of this division of responsibility is an erosion of accountability in democratic decision-making processes.

7. Conclusion

In conclusion, we have in this paper analyzed how climate change was securitized at the local level by means of a case study. We find that the case study exhibits a risk logic for unwanted consequences of climate change which concurs with von Lucke's (2020) category of risk-based securitization of climate change produced by governmental power. While this case study did not investigate the efficiency of the politics involved in climate risk management at the local level, the findings do raise some concerns as to the effects of risk logic on responses to climate change and democratic deliberation on unwanted consequences of climate

change. Further case studies of risk logic are needed to establish whether this is unique for the municipality of Stavanger or a more generic consequence of risk logic at the local level. The three analytical categories of political discourse, actors, and tools applied in the case study presented here have proven effective for identifying the manifestations of risk logic and expounding on the politics of local level climate risk management. We argue that this study is replicable for further work on the politics of local level climate risk management in other contexts.

Data availability statement

The datasets presented in this article are not readily available because there is data in interview transcripts and notes that can identify informants. This is caused by the unit of analysis being an organization where only a limited amount of people work directly with climate change and climate risk management. Requests to access the datasets should be directed to cathrine.w.karlson@uis.no.

Ethics statement

Ethical review and approval was not required for the study on human participants in accordance with the local legislation and institutional requirements. The patients/participants provided their written informed consent to participate in this study.

Author contributions

All authors listed have made a substantial, direct, and intellectual contribution to the work and approved it for publication.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Supplementary material

The Supplementary Material for this article can be found online at: <https://www.frontiersin.org/articles/10.3389/fclim.2023.1136673/full#supplementary-material>

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