



The Seasons Are Changing

– A discourse analysis of the challenges facing actors working with climate change adaptation in Västernorrland

En förändring av årstiderna – en diskursanalys av de utmaningar som aktörer som arbetar med klimatanpassning i Västernorrland möter

Olle Ringström



Master thesis • 30 credits

Swedish University of Agricultural Sciences, SLU

Faculty of Natural Resources and Agricultural Sciences

Department of Urban and Rural Development

Rural Development and Natural Resource Management - Master's Programme

Uppsala 2021

The seasons are changing – a discourse analysis of the challenges facing actors working with climate change adaptation in Västernorrland

En förändring av årstiderna – en diskursanalys av de utmaningar som aktörer som arbetar med klimatanpassning i Västernorrland möter

Olle Ringström

Supervisor: Örjan Bartholdson, Swedish University of Agricultural Science,
Department of Urban and Rural Development

Examiner: Harry Fischer, Swedish University of Agricultural Science,
Department of Urban and Rural Development

Credits: 30 credits

Level: Second cycle, A2E

Course title: Master thesis in Rural Development

Course code: EX0889

Programme/education: Rural Development and Natural Resource Management –
Master's Programme

Course coordinating dept: Department of Urban and Rural Development

Place of publication: Uppsala

Year of publication: 2021

Cover picture: Olle Ringström

Copyright: All featured images are used with permission from copyright owner.

Online publication: <https://stud.epsilon.slu.se>

Keywords: Climate change adaptation, Climate adaptation, Climate change, Resilience, Discourse analysis, Critical discourse analysis.

Swedish University of Agricultural Sciences

Faculty of Natural Resources and Agricultural Sciences

Department of Urban and Rural Development

Division of Rural Development

Publishing and archiving

Approved students' theses at SLU are published electronically. As a student, you have the copyright to your own work and need to approve the electronic publishing. If you check the box for **YES**, the full text (pdf file) and metadata will be visible and searchable online. If you check the box for **NO**, only the metadata and the abstract will be visible and searchable online. Nevertheless, when the document is uploaded it will still be archived as a digital file.

YES, I hereby give permission to publish the present thesis in accordance with the SLU agreement regarding the transfer of the right to publish a work.

NO, I do not give permission to publish the present work. The work will still be archived and its metadata and abstract will be visible and searchable.

Abstract

The Swedish County of Västernorrland is facing the threat of the climate crisis and to create a resilient system against it regional and local policy implementation plays a key role. This thesis aimed to identify and analyse the discourses affecting Västernorrland adaptation progress and to understand the challenges facing the public officials responsible for policy implementation. To do this, the national climate change adaptation policy, regional action plan of Västernorrland, and transcribed interviews with Administrative County Board and municipality representatives in Västernorrland have been studied. Critical discourse analysis combined with field theory was used to identify the discursive and social practices affecting the narrative surrounding climate change adaptation in Västernorrland.

The findings provide new insight into the challenges that are to be addressed if Västernorrland County is to reach sufficient adaptation action to become resilient against the expected climate change of the 21st century. Often heralded as a leading actor in climate change-related issues, Sweden's government arrangement of adaptation policy implementation is limiting local and regional adaptation action. Although the existing networks and collaboratives efforts for adaptation action have the potential to successfully solve the problem, insufficient funds of the rural municipalities in the County and lack of mandate given to the County administrative board constrains the sustainable development of the County. Thus, the results suggest that additional funds available for municipalities to work with adaptation is needed for municipalities to prioritise adaptation and the County administrative board needs further mandate to work with implementing policy in Västernorrland if the County is to meet the national governments aim to reach Agenda 2030.

Keywords: Climate change adaptation, Climate adaptation, Climate change, Resilience, Discourse analysis, Critical discourse analysis.

Table of contents.

1. Introduction.....	9
1.1. Aim and Research Questions.....	10
1.2. Relevance of the study.....	10
1.3. Actors.....	11
1.4. Empirical material.....	11
1.5. Limitations of the study.....	11
2. Method.....	13
3. Theory.....	15
3.1. Bourdieu and strategic action fields.....	15
3.2. Analysing policy as discourse: The WPR approach.....	17
3.2.1. The problem.....	17
4. Background.....	19
4.1. Climate change adaptation.....	19
4.2. Institutional arrangement of Climate Adaptation in Sweden.....	19
4.2.1. International level.....	21
4.2.2. National level.....	21
4.2.3. Regional level.....	22
4.2.4. Local level.....	23
4.3. Västernorrland and its changing climate.....	23
4.3.1. Present adaptation efforts in Västernorrland.....	24
5. Previous Research.....	26
5.1. Adapting to Climate Change in Sweden.....	26
5.2. Challenges associated with implementation.....	27
5.3. The emergence and institutionalization of national adaptation strategies.....	28
5.4. Adaptation strategies at different levels of government.....	28
5.5. Local adaptation governance.....	29
5.6. The role of governance in sub-national adaptation policy implementation.....	30
6. Findings.....	32
6.1. The Swedish national strategy.....	32
6.1.1. International commitments in Swedish policy.....	32

6.1.2.	Sweden's climate change adaptation measurements.	34
6.1.3.	The assessments of the government and authorities.	36
6.2.	The decree on authority's adaptation.	37
6.3.	The regional action plan.	38
6.4.	Perspectives on adaption at the County administrative board of Västernorrland.	40
6.5.	Perspectives of local level adaptation	45
7.	Analysis of the discourses.	49
7.1.	Action through guidance.	49
7.1.1.	Knowledge-raising initiatives.	50
7.2.	The key is collaborative efforts.	51
7.2.1.	Adaptation through integration.	52
7.3.	Access to power.	52
7.4.	Constrains for adaptation action.	53
8.	Discussion.	56
8.1.	Future research.	58
9.	Conclusions.	60

Abbreviations.

Adaptation	Climate Change Adaptation
CAB	County Administrative Board
IPCC	Intergovernmental Panel on Climate Change
PBL	The Swedish Planning and Building Act
RCP	Representative Concentration Pathway
SDG	Sustainable Development Goal
SFS:2018:1428	Decree on authority's climate change adaptation work, also referred to as the decree on climate change adaptation.
SLU	Swedish University of Agricultural Science
UNFCCC	United Nations Framework Convention on Climate Change

1. Introduction.

The climate crisis is a global problem with global agendas and policies developed to mitigate and halt it, however direct effects of the climate crisis are often most evident on a local scale. The impacts of the climate crisis are threatening the ecosystems of the planet, and because of this, human societies (IPCC, 2014). Recently, there has been an increasingly growing attention to the local level governance of climate change adaptation (Naess & Twena, 2019, p. 347). Therefore, local, and regional governments work with applying global and national climate change policies in manners really or imaginably suited for their local context.

The County of Västernorrland is located along the Baltic Bay and is one of five counties in the northernmost of Sweden's three traditional lands, Norrland. Consisting of seven municipalities and covering an area of roughly 22,000 square kilometres it is Sweden's sixth largest County, rich in natural resources such as forests and large river valleys. These resources are manifested through the forestry industry and the hydroelectrical plants along the County's rivers defining Västernorrland's landscape, history and the livelihoods of the people living there (Länsstyrelsen Västernorrland, 2020).

Currently, in Sweden, many actors are working with adapting to the effects of a changing climate. The decisions and plans taken on a regional level are affected by what decisions have previously been taken on a national and international institutional level. Therefore, there is a risk of contention, conflicts, and concern with the ever-present interplay on climate change adaptation that occurs between different institutional levels. Because the national strategy on climate change adaptation continuously changes, regional actors may struggle to achieve adaptation action as the framework and targets they are demanded to work with change before implementation of previous policies is reached. In addition to this, the Intergovernmental Panel on Climate Change (IPCC) identify governance systems and national institutions as constraints for climate change adaptation action as there is a tendency for them to be changed and revised too often for local- and regional action to implement policies (IPCC, 2014, p. 94-98).

1.1. Aim and Research Questions.

This master thesis aims to understand how international and national policies on climate adaptation are interpreted and applied at the County administrative board of Västernorrland County in Sweden. Furthermore, this study aims to explore the rationale of the decisions of actors involved in climate adaptation in Västernorrland. I intend to answer the following research questions:

1. How do the decisions on climate change adaptation, taken on different institutional levels, frame the actors' strategies and practices on a regional level, working with the regional approaches to climate adaptation?
2. What leeway of interpretation and action do the actors have and how is that leeway used in practice?
3. What are the challenges of implementing Sweden's national policy of climate change adaptation on a regional and local level in the Swedish County of Västernorrland?

1.2. Relevance of the study.

Climate change adaptation is a research topic that has emerged during the 21st century and adaptation policy has become a subject for analysis. However, no studies focussed on analysing the adaptation policies and their effect on Västernorrland County have been identified. Because of this, this thesis can provide new insights into what challenges and constraints to adaptation action there are in the adaptation policy and what experience on the issue officials working in Västernorrland County have. Moreover, Keskitalo and Preston have highlighted that a limitation to adaptation policy research is that there often is a:

“Persistent disconnect between the framing of adaptation policy research and the social processes that drive adaptation responses, recent arguments in the adaptation literature have expressed the need for a more reflexive approach... If adaptation researchers are to help identify pathways for capitalization on opportunities and overcoming common constraints associated with adaptation, additional attention needs to be focused on developing a more fundamental understanding of what drives implementation of adaptation in practice” (Keskitalo & Preston, 2019, p. 8).

By centring my analysis on both the discourses in adaptation policy documents and the perspectives of actors working with adaptation policy implementation I seek to address these typical constraints of adaptation policy research.

1.3. Actors.

The actor involved on a regional level is the County administrative board of Västernorrland, Region Västernorrland (responsible for questions concerning climate adaptation related to health care). In addition to this, the state and parliament are involved as they set the national strategy that the regional strategies abide by. Also, this indirectly means that Agenda 2030 and the EU climate change strategy affects decisions made on a regional level. Furthermore, the County of Västernorrland includes the different local strategies on climate change adaptation made by the seven different municipalities in the County, Kramfors, Härnösand, Sollefteå, Sundsvall, Timrå, Ånge and Örnsköldsvik municipality. There are also other actors involved in climate change adaptation in Sweden related to the County of Västernorrland, and these actors have their specific action plans on climate change adaptation, such as the Swedish Board of Agriculture and Swedish Civil Contingencies Agency (MSB) and the Swedish Meteorological and Hydrological Institute (SMHI). Since 2019, there is a joint network of administrative authorities working jointly with climate change adaptation in Sweden, called the Swedish Portal for Climate Change Adaptation that includes 24 public authorities and all 21 County administrative boards (SMHI, 2021a).

1.4. Empirical material.

The material of this study has been collected and analysed through the use of a discourse analysis of documents and semi-structured interviews with officials of the County board of Västernorrland and municipality representatives in Västernorrland¹. The main documents to be analysed are Sweden's National Strategy of climate adaptation and the regional action plan for climate change adaptation in Västernorrland.

1.5. Limitations of the study.

The findings of the study are based on analysing documents, along with interviews with a representative from the County Administrative Board (CAB) of Västernorrland and a Timrå municipality representative. Representatives from each of Västernorrland's seven municipalities were contacted, however, several

¹ SMHI published a new report on the Swedish authorities climate change adaptation progress in April 2021. Because the interviews were conducted before this, the report was not used as a foundation for the interview questions.

municipalities did not have any officials available for interviews about their climate change adaptation work during the period of this research. Two of the respondents did not have time for an interview but gave their perspectives on the problem through email correspondence. Because of this, the number of interviews is too few for any general conclusions to be drawn. However, the interviews conducted along with email correspondence provide perspectives on the experience of working with climate change adaptation in Västernorrland from officials working on both a regional and local level and what constraints there are that inhibit adaptation action. Because this research focuses on how discourses about adaptation affect the County of Västernorrland the national policies on climate change adaptation was analysed in terms of how they affect the adaptation action in Västernorrland, and thus other aspects not strictly related to regional and local level adaptation may have been lost. Another constraining factor of the interviews is that the transcribed interviews have been translated from Swedish to English in the results section whenever it has been deemed necessary to include direct quotes. Although it is unlikely, there may have been a loss of knowledge or misinterpretation of the translated quotes I have used.

2. Method.

The empirical material to be analysed consists of documents, along with data collected from semi-structured interviews. To analyse this material, critical discourse analysis (CDA) is used as a framework for my analysis, specifically the type of CDA developed by Norman Fairclough and the three-dimensional model for CDA he developed (Fairclough, 2013).

Critical discourse analysis is used to analyse texts; however, it is not limited to written texts as speech, visual images and writing is all considered to be texts according to Fairclough (Jørgensen & Philips, 2002, p. 68). This approach considers every occurrence of language use as a communicative event that is composed of three different dimensions, the text, discursive practice, and social practice. Because of this, CDA is used to examine the analysed texts linguistic features, followed by an analysis of the discursive practice, which refers to the processes that influence the consumption and production of the text. The last stage of the analysis examines the broader social practice that the text, or communicative event, relates to (Jørgensen & Philips, 2002, p. 68).

The analytical dimensions of CDA are analysed with the following tools: the wording, grammar, and metaphors of the text. Moreover, the CDA approach focuses on analysing how language constructs identities, that is, ethos and interactional control, in terms of the relationship between the different speakers of the text (Jørgensen & Philips, 2002, p. 83). Because the grammatical features that can be identified in text are many, a selection of textual elements is analysed with specific key terms used for discourse analysis. Thus, transitivity and the modality of the text are analysed in this thesis. The transitivity is analysed by identifying how processes and events are linked with the subjects and objects of the text which for this thesis has meant that the ideological consequences of different identified expressions of transitivity have been analysed (Jørgensen & Philips, 2002, p. 83). Considering this, the analysis of transitivity aims to expose how the division of responsibility is framed in the climate change adaptation policies analysed in this thesis. The term modality refers to how the speakers of the analysed texts connect or relate to the statements they make. Thus, analysis of different types of modality can be useful to reveal how the speaker positions themselves concerning the produced text and the surrounding social structures. To differentiate expressions of modality from each other, one can for example think

of if the speaker presents beliefs or interpretations as facts, or if the statement is presented to remove the responsibility away from the speaker, thus, framing it as if they are then no longer the agent of said action. (Jørgensen & Philips, 2002, p. 84).

I use critical discourse analysis to answer which different discourses I can discern in the material of the study and how these texts relate to one another and, what effect the different existing discourses of climate change adaptation in Västernorrland have for the professionals working with the implementation of adaptation strategies on a local- and regional level. In addition to this, CDA has been used to identify the possible components in the institutional network that relate to the climate change adaptation policy of Västernorrland CAB in order to reveal the challenges of implementing UN, EU and national level policy on a County level.

The semi-structured interviews were conducted with the help of interview guides with a set of open-ended questions². This was done to gain insight into the interviewee's point of view, to understand what the interviewee's considered to be important, related to the issue and, to allow the interviewed people to have the freedom to express themselves (Bryman, 2012). To analyse the interview material with CDA, the recorded interviews were transcribed in Swedish to avoid any loss of information that might have occurred if the interviews were directly translated from audio to text. Because I am a native Swedish speaker and all the empirical material was in Swedish, the empirics were analysed in Swedish. The Swedish transcriptions were only translated to English when it was deemed necessary to illustrate my findings with quotes from the empirical material in the text. With the type of CDA hitherto mentioned, the empirical material was analysed to reveal what constructions of reality, social relations and identities shape the discourses evident in the texts (Jørgensen & Philips, 2002, p. 83).

Discourse analysis does not provide all the tools necessary to analyse the wider social practices, because the social practice includes the non-discursive element of the text, which is something not considered in discourse analysis, it was necessary to include concepts that consider non-discursive elements. (Jørgensen & Philips, 2002, p. 69). To address this possible constraint, I have combined my critical discourse analysis with theoretical concepts developed or inspired by Pierre Bourdieu. Another reason for this approach is that one of the reasons for Fairclough to develop CDA that he saw such an approach as a necessary complement for research using Bourdieu (Jørgensen & Philips, 2002, p. 72)

² See appendix 1 & 2.

3. Theory.

To answer the research questions, The Bourdieu inspired field theory developed by Fligstein and McAdam's is used to analyse the social fields that shape decisions taken on climate change adaptation in Västernorrland. In addition to this, this chapter describes how the WPR approach is used to analyse the policy as discourse.

3.1. Bourdieu and strategic action fields.

Pierre Bourdieu argued that social phenomena should be analysed by looking further than just examining what is done or being said in a situation and thus developed the concept of the field. According to Bourdieu, a field can be defined as a societal structure where a specific set of games is played (Inglis, 2019, p. 204)³³. Bearing this in mind, situations can be better understood if one examines the space in which an event occurs and how the wider context shapes the space, or field (Wacquant, 2005). In addition to this, Bourdieu believed that it is necessary to ask who and whose interest shaped the previous knowledge about an event, and how this has influenced the field (Bourdieu & Johnson, 1993). Because fields are social arenas with a high degree of autonomy, a field often relates to other social fields in conflicting ways (Wacquant, 2005). Thus, Bourdieu argues that we consider political institutions as specific position in a space of relations where the space in which different fields intersect is key to understanding an institution (Wacquant, 2005, p. 152-153). Bourdieu has been used together with CDA to give the analysis further depth because the order of discourse is related to an order of social practice. Thus, discourses that investigate the relations between and within different social fields can be analysed (Jørgensen & Philips, 2002, p. 84). As texts from different governmental levels are analysed in this thesis, the identified fields often represent a single government body such as the CAB or a municipality. Due to the fact that the texts analysed are from different institutions and levels I use

³³ Bourdieu often discussed social problems by talking about games being played and the rules that shape the game and thus, there is an analogy to be made between a social field and a football field. Similar to a football field, a social field has set boundaries, rules and is occupied by different agents shaped by the conditions of the field but in addition the field is affected by other fields (Inglis, 2019; Grenfell, 2014)

the concepts of interdiscursivity and intertextuality to examine how different institutions draw from one another and what relationships there are between multiple discourses of this research (Jørgensen & Philips, 2002, p. 85). Bourdieu is often criticised for focusing on the study of individuals actions and their position within specific fields (Fligstein & McAdam, 2012, p. 25). However, this is a common misconception of Bourdieu since his theory of fields is not reductionist. This is because, Bourdieu's model realises the complexity of fields, and recognises the complex interactions between and within fields that affect the production of texts, influenced by individual and class habitus of actors and their objective placement in the field (Bourdieu & Johnson, 1993, p. 9-10). In addition to this, the broader field of power is recognised in terms of how the studied fields are positioned (Bourdieu & Johnson, 1993, p.10-11). Similar discourses may occur across different fields or institutions. This type of event can be viewed as a colonisation or appropriation of one organisation by another and thus, recontextualised (Fairclough, 2013, p. 233), Because there are strong links between the different government levels studied, I use the concept of recontextualization in my analysis to consider the extent of which the same discourses is evident throughout the institutional arrangement of adaptation in Västernorrland. Because this study focuses on the dynamic nature of fields and analysis of actors working in collaboration with one another, the hitherto mentioned concepts are combined with an approach centred on collective action, that like Bourdieu recognises the complex nature of social fields.

Fligstein and McAdam's theoretical perspective aims to analyse fields and more specifically strategic action fields and what their dynamic properties are. To understand a strategic action field, it can be defined as a socially constructed field where different actors compete for the best position of the field (Fligstein & McAdam, 2012, p. 25). According to Fligstein and McAdam, three important aspects define the strategic action field as being something socially constructed. The first aspect is that the membership of a certain field is decided based on what subjective beliefs there are, instead of possible objective truths. The second aspect is the boundaries of the strategic action field which are flexible and not static, in terms of how, depending on the situation, the strategic action field may change. Finally, the strategic action field is socially constructed in the sense that shared understandings developed over time cement into an institutional structure and rationale (Fligstein & McAdam, 2012, p.25).

Because texts of different institutions- and levels have been analysed, I use Fligstein and McAdam's definition of the terms institutional logics to understand the external and internal tensions that affect institutions. The field and frame analysis divide strategic action fields into four different categories because it is considered too broad to use for a nuanced analysis of the strategic action fields (Fligstein & McAdam, 2012, p.10). First, there is a shared understanding of the

field within institutions. In addition to this, actors within fields have different degrees of power. Also, the cultural context of the fields should be analysed, referring to what type and who are viewed as being legitimate in the field. Finally, considerations about what strategies are developed to make sense of the actions of other actors within the fields should be included in the analysis (Fligstein & McAdam, 2012. p.10-12). Thus, institutional logics cannot be analysed as a single field where there is a consensus but all these different factors that are at play within institutions should be analysed. By using this term, I seek to establish a theoretical framework for the simultaneous analysis of different fields and the dynamic linkages that exist between them (Fligstein & McAdam, 2012, p. 235). To analyse the different discourses on adaptation and what the problem is represented to be, Bacchi's WPR approach has been used.

3.2. Analysing policy as discourse: The WPR approach

Susan Goodwin has analysed why and how policy is subjected to analysing, and how policy has come to be understood as discourse (Goodwin, 2011, p. 167). Goodwin distinguishes the two different aspects of policy analysis as it is either "policy analysis for policy or policy analysis about policy (Goodwin, 2011, p. 167)". Goodwin is inspired by Bacchi's 'What is the Problem Represented to be?' (WPR) framework and uses it to discuss how discourse analysis can be used to analyse policy (Goodwin, 2011, p.168). Special focus is put on exploring the narrative of the policy being researched, thus trying to understand how problematisations in policies are being constructed and how the narrative shapes how the world is being perceived in the policy (Goodwin, 2011, p. 178-179). Goodwin uses the WPR approach as it, according to her, provides explicit steps to show how policy researchers obtain an understanding of the fields being analysed.

Bacchi's WPR approach is not only used to analyse policy documents, but it is furthered to include other types of text that relate to the discourse (Bacchi, 2009, p. 45-46). Thus, WPR has been used in analysing the transcribed interviews in addition to the national and regional adaptation policies. In addition to this, I share Bacchi's view that action plans and strategic documents should be viewed as policy. By including different forms of text in the analysis with WPR and theory of the field, the chosen concepts enable consideration into both how resistance to the policy occur (Bacchi, 2009, p. 45) and, what effects the links within and between fields has on the discourse (Fligstein & McAdam, 2012, p. 80-81).

3.2.1. The problem

I have adapted Bacchi's definition of the problem when discussing the problem presented in the adaptation policies studied in this thesis. According to Bacchi, the

word problem is used to refer to what changes are presented in adaptation policies (Bacchi, 2009, p, 11). This definition can be exemplified by how a climate mitigation policy that proposes renewable energy sources to lower the emissions of greenhouse gases implies that the problem is the emissions of greenhouse gases from fossil energy sources. As stated by Bacchi, a foundation for research focused on studying problematisations is starting with analysing what the problem is implied to be (Bacchi, 2009, p. 11-12) and thus, when analysing adaptation policies, I start with the characterisation of the problem to understand the issue.

4. Background.

In this chapter, background information relevant to the thesis aim and research question is presented. There is a brief discussion on the concept of climate change adaptation and how it differs from climate mitigation. This is followed by background information on the governmental arrangement of climate change adaptation in Sweden and finally, a discussion about the region of Västernorrland and its changing climate.

4.1. Climate change adaptation.

When discussing the effects of climate change and how it can be countered, the actions against it can be divided into two different categories, mitigation, and adaptation. Mitigation refers to the measures that are taken to reduce the emission of greenhouse gases or increase the absorption of greenhouse gases. Whereas adaptation is a concept that the IPCC defines as: “The process of adjustment to actual or expected climate and its effects” (IPCC, 2016). This is the definition that has been used for the understanding of the concept of climate change adaptation for this research. In addition to this, the European Union defines climate change adaptation stating that:

“Adapting to climate change means taking action to prepare for and adjust to both the current effects of climate change and the predicted impacts in the future” (European Commission, 2021)

This definition is also considered, as it adds another aspect of adaptation, that is that adaptation is creating a resilient system that is robust against future threats as well as past or present ones.

4.2. Institutional arrangement of Climate Adaptation in Sweden.

Climate change adaptation and mitigation policies in Sweden are governed by several different institutions and the strategies and policies concerning adaptation

and mitigation have been developed by many different actors, on an institutional level reigning from the international- to the local administrative level. The government arrangement of climate change adaptation is visualised in the following figure:

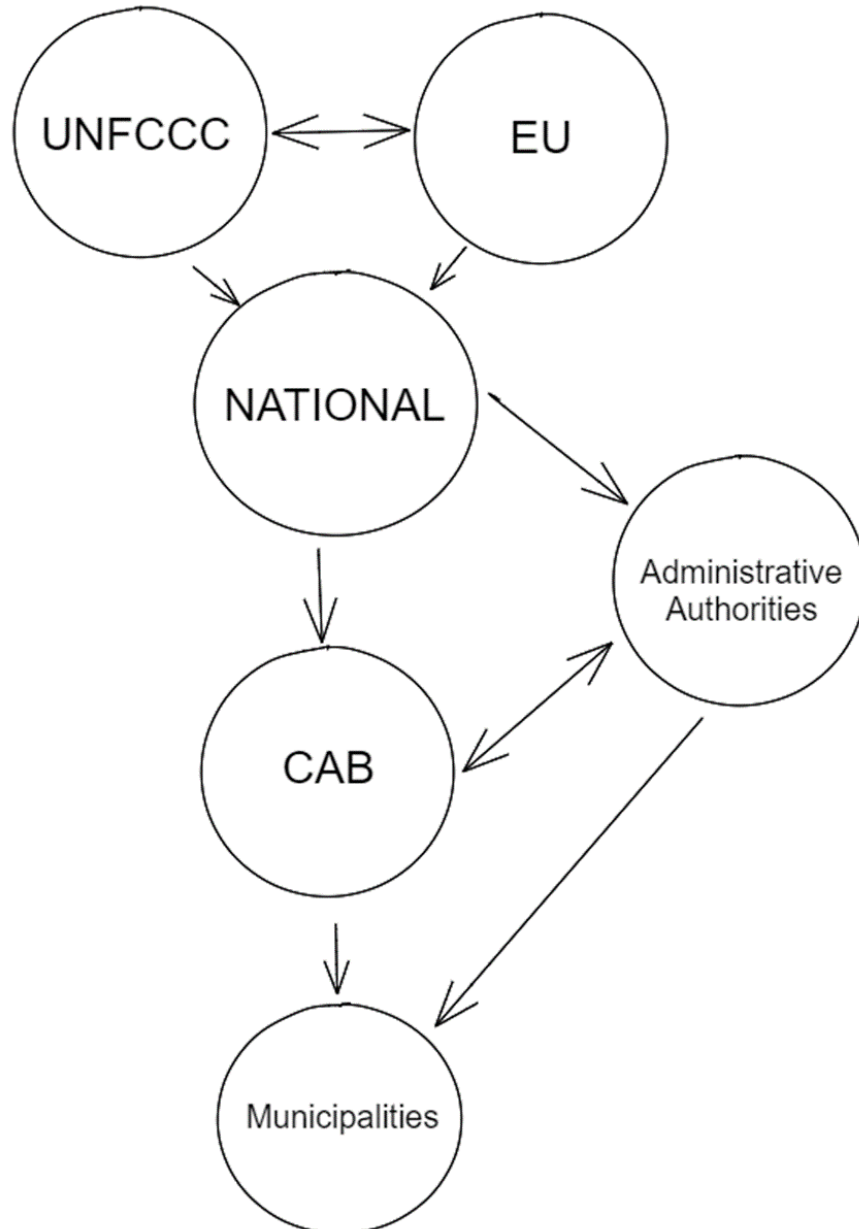


Figure 1. Governmental arrangement of Climate Change Adaptation in Sweden. Inspired by the adaptation government arrangement developed by Nalau et al (2019).

Because of this rather complicated division of responsibilities concerning climate change adaptation and mitigation, the Swedish government developed the climate adaptation website klimatanpassning.se to guide actors involved in climate change adaptation in Sweden. Managed by SMHI, the site provides information on how climate change adaptation and mitigation on each

institutional level (SMHI, 2021a). The climate change adaptation portal provides information on how the governmental arrangement of adaptation looks in Sweden, what type of references guides the different authorities and levels of government use to develop their strategies. Thus, it provided important insights into the Swedish adaptation framework not found anywhere else, which proved essential to answer the research questions. The influence of the EU adaptation strategy is evident in the reference guide the adaptation portal provides for municipalities to guide them in their adaptation work, as it is based on the EU's Adaptation Support Tool (SMHI, 2021a).

4.2.1. International level.

The climate change adaptation and mitigation initiatives took on the international level that most influences Sweden is the United Nations Framework Convention on Climate Change (UNFCCC) and the European Union climate change adaptation strategy. The European Commission's adaptation and mitigation strategy is focused on increasing the resilience towards climate change in Europe (SMHI, 2021a). By adopting Agenda 2030, Sweden has the ambition to achieve each of the SDGs. Many of the SDGs cover topics that relate to climate change adaptation and mitigation, but goal number 13, Climate Action, has a special focus on adaptation and mitigation (UN). In addition to this, Sweden is a part of other international organisations and councils that work with climate adaptation and mitigation, such as the Arctic Council, World Health Organization (Miljödepartementet, 2018)

4.2.2. National level.

National policies on climate change adaptation existed before the 2018 national strategy was developed and SFS 2018:1428 was finalised. The need to adapt because of climate change was first emphasised in the 2007 inquiry about the threats and opportunities facing Sweden because of climate change (SOU 2007:60). The main effect of the 2007 inquiry was that CABs were identified as the central actor to start working with climate change adaptation. This was realised in 2010 when the government gave the CABs the mandate to start developing their adaptation plans and provide support for municipalities and other local actors in their adaptation work. Because the 2010 mandate and the revised version from 2014 gave the CABs freedom to develop their measurements and initiatives to tackle climate change, the first versions of the regional plans on adaptation were developed without consideration of a national policy (Interview, Sjödin).

However, in 2018 the Swedish government developed the national climate adaptation strategy (Miljödepartementet, 2018). This strategic document includes

general targets for climate change adaptation and how some of the targets connects to Sweden's climate change mitigation targets. The Swedish strategy includes information on the division of responsibilities for the different proposed adaptation goals and to remain up to date the strategy is meant to be updated every fifth year (Klimatanpassning, 2021). Sweden's national strategy on climate change adaptation includes information on climate change in Sweden, how it affects the country and in which way it will continue to affect Sweden in the 21st century. Because Sweden is a part of international organisations such as the United Nations and the European Union, the national strategy includes a special chapter on climate change on a global level with headings on climate change adaptation and mitigation measures taken on an international level (Miljödepartementet, 2018, p. 43).

Although the entire national strategy is analysed, chapter 9 of the national strategy is of special interest because the chapter provides extensive information on the climate change adaptation targets, organisation, and division of responsibilities that Sweden has taken in response to climate change (Miljödepartementet, 2018, p. 62). The division of responsibility to deal with specific areas is given to the different expert authorities. For instance, the Swedish Board of Agriculture has an adaptation action plan on the impact climate change will have on agriculture, the Swedish Board of Forestry has a plan on how forestry is affected by climate change and so on (Miljödepartementet, 2018, p. 54). Following, the national climate change adaptation strategy, the decree about the authority's climate change adaptation tasks (SFS 2018:1428) was developed, which states how Swedish authorities should work with climate change adaptation and mitigation initiatives. In total, all 21 CABs and 32 different state authorities are regulated by decree (2018:1428).

4.2.3. Regional level.

The administrative County boards have the overarching responsibility of ensuring that the Swedish national strategy on climate change adaptation is implemented on a regional level. The decree on climate change adaptation gave the CABs and other concerned authorities the obligation and mandate to work with adaptation. Further, the decree states that each CAB should initiate, support, and review the municipalities adaptation work, analyse how the County is affected by climate change, develop a framework for increased knowledge and planning concerning adaptation. In addition to this, the decree states that the CABs should support and review the adaptation work of the regional sectoral agencies and support river groups (SFS:1428).

To achieve this, each CAB works together with public authorities to develop a regional action plan about the risk of climate change in the County, and what climate change adaptation and mitigation measures must be taken and who is

responsible for what. Furthermore, the CABs have the role of supervising the municipalities in their adaptation and mitigation work, along with ensuring that there exist collaborative efforts between municipalities so that the actions of one municipality does not negatively impact another municipality (SMHI, 2021a).

4.2.4. Local level.

The actors involved in climate change adaptation and mitigation is primarily municipalities. (SMHI, 2021a). Moreover, Sweden has a municipal self-government system which gives the municipalities a rather high degree of independence and power. This gives the municipal council the power to determine what is best for their local region themselves, which includes the issue of adapting to climate change (SKR, 2021). During the period this thesis was written there were no legal obligations for municipalities to explicitly work with climate change adaptation. However, because municipalities are responsible for important infrastructure, local schools, emergency services, healthcare, etc, they have the responsibility to adapt the areas that they manage against the effects of climate change (SMHI, 2021a).

4.3. Västernorrland and its changing climate.

Two IPCC climate change scenarios have been used by SMHI to analyse how Västernorrland climate is likely to change during the 21st century, Representative Concentration Pathway (RCP) 4.5, and RCP 8.5. The low-risk scenario, RCP 4.5 predicts the average yearly temperature in Västernorrland to rise by around 3 °C by the end of the century, and by 6 °C according to the high-risk scenario, RCP 8.5 (Nylén et al, 2015). Both scenarios predict an increase in precipitation in Västernorrland and an increased frequency and intensity of extreme weather events in the coming decades. The changing climate will lead to an increased frequency of heat waves the region experiences which in turn means an increase in days with low soil moisture from 5-10 days today to 25-50 by the end of the 21st century (Nylén et al, 2015, p. 64). This is likely to cause more severe forest fires in the region and the regions agricultural sector risk facing periods of water scarcity. One of the main reasons for the increased risk of drought is the decrease in snowfall in the County. Although the precipitation will increase, the warmer climate means a higher frequency of rain and a much lower frequency of snowfall. The decreased water stored over winter as snow will mean that less snow melts during spring, resulting in a weaker spring flood which in turn will threaten the ground water levels in the County because of the decrease in the flow of the County's rivers (SMHI, 2021b).

There is a possibility that the changing climate of Västernorrland will have a positive effect on some sectors in the County. Evidence shows that the growing season in the County is longer at present than it was during the 20th century and it is likely to be extended even further in the coming decades. It is highly possible that this will lead to the conditions required to grow new crops that cannot sufficiently grow in Västernorrland today (LRF & Länsstyrelsen Västernorrland, 2015).

The CAB of Västernorrland has developed a regional action plan on climate change adaptation together with the County's municipalities, the Swedish Forest Agency, the insurance company Länsförsäkringar Västernorrland, The Federation of Swedish Farmers Västernorrland (LRF Västernorrland) and Swedish Transport Administration. The CAB has actively worked with climate change adaptation since 2010, with the latest action plan being published in 2018 (Sjödin, 2018). In addition to the action plan, the CAB of Västernorrland has together with developed a regional food strategy, which includes information on how the supply- and production of food is likely to be affected by climate change in Västernorrland (LRF & Länsstyrelsen Västernorrland, 2015).

During the period of this thesis, none of the seven municipalities had published any specific policy or action plan on climate change adaptation. However, the interview held with a CAB of Västernorrland representative revealed that Härnösand municipality is in the process of publishing a local strategic document about how the municipality will work with adaptation, which is planned to be published in 2021.

4.3.1. Present adaptation efforts in Västernorrland.

This section gives insight into what type of adaptive efforts have been or are being implemented in Västernorrland specifically and Sweden in general. At present in Västernorrland, there are several projects, measurements, and initiatives taking place to adapt the County towards the effects of climate change. Because the County has already experienced several extreme floods during the 21st century, there is already planning in place for how to limit the negative consequences from floods. In several of the County's municipalities, the risks of landslides due to extreme weather have led to reinforcement measurements being implemented (Sjödin, 2018, p. 14). Another example of measurements that relate to climate change adaptation that has been implemented in Västernorrland is the recovery of drained peatland located near agricultural land in the proximity of waters. This has been done to increase the soil nutrients of the agricultural land and simultaneously decrease the over-fertilisation of the nearby waters by keeping the nutrients in the vegetation (Lindström, 2020, p. 147).

Moreover, on a national level examples of adaptation efforts include the work of all municipalities and CABs ensure that measurements are implemented to

limit the effects of climate change in shore protection planning, coordination between government agencies and municipalities in how to work with adaptation in the built environment and to develop sustainable food systems adapted to a changing climate (Klimatanpassning, 2021). On a regional level, however, most of the adaptation efforts done by the CAB of Västernorrland are educational efforts, where the CAB informs and educates actors across the County on why and how they can adapt their operations to be resilient towards the effect of climate change (Sjödin, 2018).

5. Previous Research.

In this chapter, there is a brief literature review of the previous research about climate change adaptation, adaptation action, and policy implementation. Moreover, the main findings of the selected research considered relevant for this study are presented in sections divided by topic.

5.1. Adapting to Climate Change in Sweden.

Keskitalo (2010) have researched climate change adaptation policies in the Swedish County of Västra Götaland with a specific focus on the national distribution of climate change adaptation and mitigation responsibilities in Sweden. To answer the studies research question, Keskitalo did a study of secondary sources, in addition to semi-structured interviews with actors involved in climate adaptation in Sweden. In sum, the results of the study found that the Swedish development of climate adaptation policy has partly been the results of adapting to the development of international policies on climate change adaptation. Moreover, the increased occurrence of disasters connected to climate change, such as floods, for example, has led to increased attention to the need for climate change adaptation policies (Keskitalo, 2010, p. 226). In contrast to Sweden's mitigation work, where the country is often seen as a leading example of implementing mitigation measures to reduce pollution, Keskitalo found that Sweden has been relatively late to consider climate change adaptation most likely because domestic effects of climate change have not been considered until recently (Keskitalo, 2010, p. 190).

The study found that close cooperation with other state authorities is essential for adaptation work on a regional level. Keskitalo exemplified this by reference to how the CAB of Västra Götaland works together with the Swedish Geotechnical Institute (SGI) in issues relating to adapting against landslides (Keskitalo, 2010). It is noteworthy that Keskitalo's study was conducted before the development of Agenda 2030 and the Swedish national strategy on climate change adaptation from 2018 and thus, the contents of adaptation and mitigation policies in Sweden was different compared to the policies studied in this master thesis. However, the institutional framework is still very similar in 2021 and the conclusions were

drawn by Keskitalo highlight the complex nature of Sweden's climate change adaptation and mitigation work.

5.2. Challenges associated with implementation.

Howlett et al (2019) state that a common challenge in implementing climate change adaptation policies is that they often risk being outdated when finalised and ready for implementation by stakeholders. The rapid rate of climate change may hamper local governments the flexibility to tackle climate change as policy targets are always at risk of being outdated (Howlett et al, 2019, p. 54). The challenges of climate change adaptation policy implementation do not only occur at the formulation stage of adaptation policies but occur across all different stages and institutional levels of policy formulation (Howlett et al, 2019, p.56).

Moreover, the study provides a table of possible problems that is associated with the implementation stage of policies about climate change adaptation. The list includes the problems of slow authorization, weak political support, bureaucratic opposition, poor incentives for implementers, vague or multiple missions, changing priorities, poor design, uneven feasibility, funding limitations, weak management structure or network coordination capacity and lack of clarity in operational plans. (Howlett et al, 2019, p. 55).

To address the challenges of implementing adaptation policy the authors suggest that the key aspect of successfully policy implementation is managing stakeholder dynamics (Howlett et al, 2019, p. 63). Because local and regional climate change adaptation measurements are key to most adaptation policy makers it is often essential to engage local-level stakeholders in the decision-making process as they can provide expert knowledge about local conditions (Howlett et al, 2019, p. 63). In addition to this, it is important for researchers analysing climate change mitigation and adaptation policy to address if any marginalised stakeholders have not been given a voice in the policy making process and if so, it is necessary to analyse who have been excluded from the process and what the implications are (Howlett et al, 2019, p. 65). Successful policy implementation is often characterised by a process that continues to address challenges with implementation at every stage of the process, constructing a framework that allows for policy changes to counter challenges and the dynamic nature of climate change. Moreover, it is essential that there are sufficient resources and formal authority available to all stakeholders involved to achieve the targets of the policy (Howlett et al, 2019, p. 65-66). The importance of multi-level institutional cooperation is highlighted as key for successful implementation where actors have a clear division of responsibility and constructive cooperation between sectors (Howlett et al, 2019, p. 65-66).

5.3. The emergence and institutionalization of national adaptation strategies.

Jurgilevich et al. (2019) have conducted a research project where they ask the question of examining how the institutionalization of national adaptation strategies has emerged in the Global North (p. 212-213). This contrasts with many countries in the Global South that have implemented National Adaptation Plans of Action (NAPAs), under the UNFCCC, as most national strategies in the Global North are not legally binding, but only provide guidelines without formal requirements (Jurgilevich et al, 2019). The study found that there are examples of countries where the strategy has been fully institutionalised with the creation of climate change adaptation laws such as the UK and Finland (Jurgilevich et al, 2019, p. 223). However, the findings indicate that issues such as lack of political awareness, resources and insufficient access to networks and knowledge are all barriers most EU countries have to adaptation action (Jurgilevich et al, 2019, p. 219). Another interesting finding of the study was that the national strategies of the Nordic countries do not cover the cross-border impacts they are likely to experience because of climate change even though this may impact them to a greater extent (Jurgilevich et al, 2019, p. 221). The findings of the study led the authors to identify three issues important for analysing the implementation of adaptation policy: “(1) barriers and enablers; (2) adaptive capacity; and (3) each country’s specific institutional context (Jurgilevich et al, 2019, p. 223).

5.4. Adaptation strategies at different levels of government.

There is often a gap between different levels of government in how climate change adaptation policy is implemented and to what extent targets of policy is met. In their research paper, Christoph Clar and Reinhard Steurer ask research questions about the factors that enable climate change adaptation strategies on different institutional levels to facilitate adaptation action and how the interplay between different roles of government have an impact on this. Furthermore, the study aims to answer whether these factors are level specific or if the factor is shared across different governmental levels (Clar & Streurer, 2019, p. 310). Finally, the study sought to examine how policymakers can influence these conditions (Clar & Streurer, 2019, p. 311). To answer the questions, the authors summarised the findings of 14 qualitative studies on climate change adaptation strategies which in turn were case studies based on semi-structured interviews and document analysis. These case studies were from United Kingdom, Denmark, Finland, Netherlands, Australia and Canada with both national and regional

adaptation strategies being analysed along with two international adaptation strategies from the EU and Baltic Sea Region (Clar & Streurer, 2019, p.311).

The findings of the study indicate that adaptation strategies are usually formulated as non-binding aspirations or targets, and this was similar across all institutional levels. In terms of what measurements or goals adaptation strategies should seek to accomplish the study found that the formulation in strategies is rather vague. There were only a few examples in the study of adaptation strategies that gave clear information of how and within what timeframe adaptation action should happen. Even though there were exceptions that had distinct, nuanced goals and measurements these exceptions were not more likely to lead to policy implementation (Clar & Streurer, 2019, p.321). There was a clear connection between to what degree adaptation strategies lead to adaptation action and legally binding adaptation policies and whether the subject of the case study had already experienced the consequences of climate change. Across all government levels, the issues and approaches were similar with a multisectoral strategy process and anticipatory adaptation were found likely to be implemented only when there was clear evidence of climate change leading to climate-related disasters such as drought or flooding (Clar & Streurer, 2019, p.322). Cases that had experienced an increased frequency of flooding due to climate change were found to be more likely to have implemented measurements of climate change adaptation strategy than other cases (Clar & Streurer, 2019, p.321-323).

5.5. Local adaptation governance.

Lars Otto Naess and Michelle Twena have studied the existing power relations on local level adaptation governance (Naess & Twena, 2019, p. 347). They studied the context, cooperation and conflict and consequences of local adaptation governance and discuss the insights from their case study in Kenya with what implications their findings have on both the Global South- and North context (Naess & Twena, 2019, p. 348-349). Using a political economy framework for their analysis, Naess and Twena found that implementation of adaptation measurements into policy tend to happen to an extent that does not challenge the existing power structures on the local level and thus, Names and Twene claim that much of the change proposed is somewhat superficial (Naees & Twena, 2019, p. 358). Moreover, they found that local-level adaptation is, in most cases, not initialised at the local level of governance. Instead, policies on adaptation and resilience have been created on an international level and then filter down through different national governmental levels. The case study in Kenya did illustrate both opportunities and challenges of local-level adaptation that can provide insight to both Global north- and south contexts. In Kenya there was a devolution of power happening, referring to a decentralisation where the mandate to decide on

adaptation processes was moved from the national government to the County level. The findings showed how local-level adaptation analysis needs to be broadened to include potential trade-offs in decision-making processes, who the winners and losers of the measurements are and, thus provide insight into the tensions that exist between local, regional, and national actors. Concerning this, adaptation research should focus on thoroughly understanding the context of the case being researched because ultimately it is the context that frame how all governance adaptation processes such as discourses are shaped and interpreted (Naess & Twena, 2019, p. 360). Finally, another key finding was the need for long term studies to examine how adaptation unfolds across time and space as studies conducted during a limited space of time is likely to miss longstanding trends (Naess & Twena, 2019, p. 359).

Similarly, to Naess and Twena's study, Kristiansen and Granberg have analysed the barriers and progress being made on adaptation at the local level. They studied 13 different Sweden municipalities to describe and analyse local-level adaptation organisation in Sweden (Kristiansen & Granberg, 2021, p. 1). They found that there is still a high level of uncertainty on who is responsible for what when it comes to adaptation at the local and regional level, apart from at the CABs who now has a clearer role (Kristiansen & Granberg, 2021, p. 14). In addition to this, they found that the CABs have a strong guiding role in inspiring municipalities to engage more in adaptation action and, though the adaptation work on a municipal level is still in its formative stages there is a general interest to adapt their organisation considering climate change across all sectors of the municipality (Kristiansen & Granberg, 2021, p. 15-16).

5.6. The role of governance in sub-national adaptation policy implementation.

Nalau, Lawrence and Burton's research focus on understanding the role of the sub-national level of government in the implementation of climate change adaptation policy in the institutional context of New Zealand, Australia and the Republic of Vanuatu (Nalau et al, 2019, p. 328). Moreover, the relationship between actors on several different government levels is recognised as key to understanding the narrative on climate change adaptation policy at a sub-national level because stakeholders are constrained by the framework and structure in multi-level governance systems (Nalau et al, 2019, p. 327-330). Thus, local actors can only do as much as the government system in which they operate allows (Nalau et al, 2019, p. 327). Moreover, the authors highlight that smaller local-level governments, such as rural councils, often have less ability for adaptation

action because they are poorly funded, both in terms of economic and social capital (Nalua et al, 2019, p. 337). The local adaptation policies in New Zealand, Australia, and Vanuatu focus on continuous updates in the policy planning processes, along with investments in information and data about climate change impacts in Australia and New Zealand and not many concrete implemented adaptation measurements (Nalau et al, 2019, p.338). The authors suggest that the devolution of the state mandate to local level decision-makers in terms of who has the responsibility to ensure adaptation action is problematic. This is because, in the cases, they studied their findings showed how there tends to be a shortage of skills and resources at the local level (Nalau et a, 2019, p. 339).

6. Findings.

This chapter aims to describe the discourse around adaptation in the Swedish national strategy in climate change adaptation, the decree on climate change adaptation, the CAB of Västernorrland's action plan on climate change adaptation and interviews with people working with climate change adaptation in Västernorrland's municipalities and County administrative board. This chapter presents the findings from each analysed text⁴ separately, which is followed by a combined analysis of the discourses found in the following chapter.

6.1. The Swedish national strategy.

One of the key reasons to develop the Swedish national strategy on climate change adaptation was to contribute towards a stronger and more collaborative effort for adaptation action on a national scale (Miljödepartementet, 2018, p. 62). By reading the government's reason for implementing a five-year policy cycle to have continuous follow-ups, revisions, and assessments it becomes evident how the government arrangement on adaptation is formulated. Broadly speaking the strategy emphasises the long-term resilience and sustainability of Swedish society by looking at the economic, social and ecological opportunities and challenges climate change is bringing to Sweden (Miljödepartementet, 2018, p. 62). The reliance put on cooperation across all levels in the Swedish strategy is something evident across all chapters of the national strategy. In terms of the connotations found in the text, the grammar is often neither positive nor negative, but neutral. However, the national strategy has a positive stance on the influence and implementation of international policies about adaptation to the Swedish discourse.

6.1.1. International commitments in Swedish policy.

The decisions on climate change adaptation in Sweden is strongly linked to the country's commitments towards Agenda 2030 and the EU's strategy on climate

⁴ Text refers to both the analysed documents and transcribed interviews, as explained in the methodology chapter.

change mitigation and adaptation. Throughout the strategy, the SDGs and EU climate change targets are continuously referred to when describing the decisions Sweden have taken on climate change adaptation (Miljödepartementet, 2018). In the strategy document, the Swedish government identifies climate change adaptation measurements in the SDGs of Agenda 2030 and addresses how they take these goals into consideration when developing the Swedish strategy on climate change adaptation (Miljödepartementet, 2018, p. 64). Moreover, as adaptability is one of the three overarching goals of the Paris agreement (UNFCCC, 2021) Sweden have agreed to adapt its society to tackle the consequences of climate change. The official statement of how Sweden considers the international climate change adaptation commitments that the government is clearly influenced by the decisions about adaptation taken on the international level as the strategy states that: “the international climate change adaptation goals are more distinct when compared to the national goals that the parliament and government have decided on” (Miljödepartementet, 2018, p. 63).

Because of this, Sweden decided to incorporate international goals in its policy and targets. The explicit reliance on international adaptation policy in the Swedish strategy document could be interpreted as Sweden, on a national level, is to a high degree following the dominating international discourse on climate adaptation. Because the government so explicitly claim that the strategy of the United Nations and European Union is more precise and clearer than the Swedish strategy, and thus, better suited as guidelines for stakeholders involved in climate change adaptation, it is clear that Swedish national discourse is heavily influenced by international policies (Miljödepartementet, 2018, p. 61,64-66,68). This could highlight some of the power dynamics at play between different social fields, as decisions on an international level have a substantial impact on the decision-making on a national level.

As there is a continuous reference to how UN and EU goals on climate change adaptation can be implemented for the Swedish Strategy, especially the explicit statements about international policies being more distinct than the national policy on climate change adaptation (Miljödepartementet, 2018, p. 58, 61-68), the transitivity of the national strategy of Sweden highlight that there is a high degree of dependence on international actors from the Swedish government and parliament in issues of climate change. The national strategy contextualised several of the SDGs that concerns adaptation measurement to the Swedish context, such as SDG number 13 climate action, number 11 sustainable cities and communities and number 2 no hunger (Miljödepartementet, 2018, p. 63). This is furthered cemented by the statement in the following statement in the Swedish national strategy:

” [Own translation] The international goals for climate change adaptation are more distinct than the national goals that the government and parliament have decided on.

Therefore, the government considers that Sweden's international commitments should be clarified within the scope for politics, strategies, and planning on a national level following the direction of subgoal 13.2 in Agenda 2030. In this way, the conditions of having an integrated approach where goals and measures follow the mandate and resources available are created" (Miljödepartementet, 2018, p. 63-64).

The result of this is that international policies on climate change adaptation have a direct impact on stakeholders working with the issue on a regional and local level in Sweden depending on if the national strategy is implemented in practice or not. Because the narrative on Sweden's adaptation strategy is heavily influenced by international goals from the UN and EU, even though there are no requirements for the actors working with adaptation in Sweden to implement UN and EU goals, international actors have a high degree of agency and power on adaptation policy development in Sweden. As explained in this section, the reliance on international adaptation policy is evident in the national strategy. In addition to this, the influence of international adaptation policies is evident on the local- and regional level. The CAB of Västernorrland clearly states that they consider Agenda 2030 and the EU's adaptation policy in their planning (Sjödin, 2018) and of Västernorrland seven municipalities explicitly state that they work with the SDGs in their climate change related measurements (Härnösands kommun, 2021; Kramfors kommun, 2021; Sollefteå kommun, 2021; Sundsvalls kommun, 2019; Timrå kommun, 2021; Ånge kommun, 2021 & Örnsköldsvik kommun, 2021).

6.1.2. Sweden's climate change adaptation measurements.

The national strategy includes many goals and measurement that are presented as desirable for Sweden when it comes to adapting its society to be more resilient towards climate change⁵, almost all the responsibility for action is delegated to expert authorities, CABs and to a lesser extent, municipalities (Miljödepartementet, 2018, p.70). The reason why municipalities are not given more mandate of adaptation action is probably because of the municipal self-governance explained in chapter 4.2.4 (Bolin et al, 2015, p.11). The dominating discourse on climate change adaption at a national level is thus, that regional and expert authorities have the best knowledge of their region and area of expertise and therefore, they are actors that should have the mandate for adaptation action (Miljödepartementet, 2018, p.70). This indicates that there is no legislation directed towards ensuring that municipalities work with specific adaptation efforts, instead the local level of government has the discretion to choose if and how adaption action is needed. This is illustrated in the governments' assessment

⁵ See chapter 4.3.1 Where examples of the type of goals and adaptation efforts that is presented in the national strategy is discussed.

of the needed principles for the work with adaptation. Thus, the government do not consider political decisions on what RCP scenario to follow by the government or parliament as the right approach for Sweden's climate change adaptation initiatives:

“[own translation] The climate change adaptation work should be practised through the establishment of guiding principles about sustainable development, reciprocity, scientific foundation, the duty of care, the integration of adaptation measurements, flexibility, management of risk factors, time, and transparency” (Miljödepartementet, 2018, p. 64).

“[own translation] ...The government does not share the investigations' assessments that political decisions by the government or parliament are needed...about what climate change scenario that it is reasonable to follow or what risks should be accepted. Even though many actors request a more distinct direction about what RCP scenario they should work with, what sea-level rise they should consider or within what timeframe the adaptation work should be within, the government consider it problematic to “draw a line” to which all relate to” (Miljödepartementet, 2018, p. 65).

These quotes highlight that many actors want distinct directions from the national government on how to work with adaptation. Here, the government do not agree but opt for a more flexible approach to climate change, because they do not think that it is right to work from a single climate change scenario since there is a high degree of uncertainty concerning the degree to which the climate is changing. Instead, as has been covered, the national strategy focuses on collaboration and guiding principles in how to adapt, where CABs, municipalities, and expert authorities have a high degree of leeway in how they adapt to climate change, depending on their context, and the effects of which can be seen by examining the agency of expert authorities in terms of their adaptation responsibilities.

The narrative of how the national strategy frames the responsibilities of expert authorities can be exemplified by looking at how none of the measurements mentioned in the national strategy concerns the Sámi and reindeer husbandry, even though this is a livelihood that already is affected by climate change (SMHI, 2021c). However, the national strategy refers to the Sámi Parliament, the Sámediggi, decision to seek support to develop climate risk assessment analysis documents in 2017 (Miljödepartementet, 2018, p. 54 & 69-70). This further emphasises how the narrative on adaptation at a national level in Sweden, does not give the government any obligation for adaptation action, only recommendations or decrees. As has been described the national government can be seen as an indirect actor engaging in adaptation action as the CABs and other state authorities work with the adaptation targets the parliament has ratified. Thus, national government decisions have a large impact on the direction that the country's climate adaptation initiatives take, even though their impact on ensuring that adaptation action happens is minimal in the current context. Action in terms of the implemented policy is to be achieved through a 5-year policy cycle that

ensures that the adaptation work is continuously being developed, reviewed and revised to ensure efficiency (Näringslivsdepartementet, 2018, p. 74). In addition to this, the national government do not view financial support for adaptation action as a tool to be used in most cases:

“[own translation] The government considers that the main principle is that the cost for protection of the property shall be covered by the owner of said property. The responsibility to prevent and restore damage caused by extreme weather events is not different to risk management in other parts of society. Because of this, an incentive to avoid the exploitation of risk areas and to act upon necessary protection measures is created” (Miljödepartementet, 2018, p. 75).

The narrative on the adaptation of the national government is that adaptation should be considered in every part of society and by incorporating it in everyday thinking it is not necessary for additional financial support outside of already existing structures. The power to act is thus on the individual landowner, no matter if that is the state, municipality, company, or private person. However, the ability to act could be rather different depending on the landowners' financial power or social status. This is something that was highlighted by the regions, municipalities and counties who asked for more state support as adaptation measurement can very expensive (Miljödepartementet, 2018, p.78). Even though Sweden's route to develop a climate change adaptation strategy without set requirements and legal obligations but rather function as a general guideline of the direction to country wants to follow is similar to the narrative of many national governments of the Global North (Jurgilevich et al, 2019, p.223). The Swedish example differs slightly from the findings of Jurgilevich et al's study because some aspects of Swedish strategy was implemented in a decree on authorities' climate change adaptation work in 2018.

6.1.3. The assessments of the government and authorities.

The meta-narrative of the national strategy is mostly neutral without any expressed assumptions and emotions. However, the textboxes with the government's, investigation's, and consultive body's assessments, provide more insight into the discursive and social practice of the studied institutions because of the more explicit value judgement evident in the text (Miljödepartementet, 2018, p. 10-12, 15, 18-19, 21-22, 44, 62, 64 & 68-83). For instance, the government state that:

“[own translation] The climate change adaptation work in the municipalities must be strengthened (Miljödepartementet, 2018, p. 11)”

Here, the government clearly expresses deficiencies in adaptation at the local level. This is further evident in the following section of the plan about how adaptation needs to be considered for community planning, where it is stated that:

“[own translation] According to the current legislation, however, there is no requirement on the municipalities to consider climate-related risk in the already built environment. Furthermore, there are obligations for the municipalities to strategically work with how the risks can be reduced or eliminated. To strengthen the climate change adaptation work in the municipalities, there is a need for explicit rules stating that the municipalities need to consider the risk of damage on the built environment from floods, landslides, and erosion that are climate change-related and how such risk can be reduced or stopped” (Miljödepartementet, 2018, p. 12).

In the light of this, the Swedish government has then recognised that there is a need for additional legislation on how municipalities work with adaptation. Furthermore, the plan states that this should be achieved through a revision of the Swedish Planning and Building Act (PBL) where municipalities are now required to consider risks of climate change in their comprehensive plan and how to limit or stop them (Miljödepartementet, 2018, p. 12). This suggestion was, however, met with opposition from representatives from the regional and local levels of government:

“[own translation] The standpoint of Swedish Association of Local Authorities and Regions is that the wording should be changed to how the risks of climate change can be managed or likewise” (Miljödepartementet, 2018, p. 12).

This sheds light on what kind of contentions there are and have been between the different levels of government in Sweden on how the adaptation policies should be constructed. In this case, the standpoint of the government was implemented following a change of the PBL in early 2020 (SFS 2020:76).

6.2. The decree on authority's adaptation.

To identify the legal discourse of the climate change adaptation decree, it was necessary to analyse how the intentions, division of responsibilities and reasons to adapt were presented. As stated in chapter 4.1.2 the decree states how all of Sweden's public authorities along with the countries 21 CABs have the obligation to work with climate change adaptation as a part of their operation (SFS 2018:1428). The decree had the effect of moving much of the mandate on adaptation from the government to the different state authorities, mainly the CABs which operate on a regional level. Like the results of the Jurgilevich study (2019, p. 223), the decree did not establish any adaptation targets to aim for,

cemented in law, it only clarified what stakeholders have the legal obligation to work with adaptation (SFS 2018:1428). Thus, there are obligations put on other levels of government from the decision made in the Swedish parliament, but as illustrated in section 6.1 there are incentives to act but no legal obligations for adaptation action.

6.3. The regional action plan⁶.

This section presents the findings of the regional action plan on adaptation. To answer the research questions the text, discursive practice, and social practice of the action plan is presented⁷.

The action plan is an official document of a public authority; thus, it is not surprising that it clearly states where the CABs is positioned in the governmental arrangement of Sweden's adaptation work. The work done at the national level is only mentioned in the contexts of how the government gave the CAB the task to work with adaptation. Instead, the plan discusses the problems the County was because of climate change and focuses on discussing the division of responsibilities for adaptation action for the County's different actors (Sjödin, 2018). The language itself is mostly neutral, stating facts, proposing needed measurements without many value judgements in the statements. However, the wordings of the action plan indicates that this is a problem that needs to be solved now. There is a sense of urgency in how the reasons why there is a need to adapt to limit the negative effects of climate change in Västernorrland:

“[own translation] We are already experiencing the effects of climate change in our society. The effect of climate change will continue and affect us even more in the future. A future with higher temperatures, more precipitation, and an increased risk of extreme weather... Even if we drastically decrease our carbon emissions it will take time before the climate change stops and because of this, it is important that we start the transition and adapt our society to tackle these changes today” (Sjödin, 2018, p. 7).

The problem is thus, seen as immediate, and even though the action plan only covers Västernorrlands adaptation needs, it is emphasised how adaptation needs to happen across all different institutional levels.

⁶ An internal unpublished document from the County administrative board of Västernorrland have been used to highlight how each regional adaptation measurement relates to certain national environmental objectives and SDGs according to the CAB.

⁷ Because the current regional action plan was constructed just before the national strategy on climate change adaptation was finalised, the plan is based on a revised version of the previous government commission giving the CABs the mandate to work with adaptation and not the 2018 national strategy.

According to the regional action plan, the way to approach adaptation is through information, guidelines, and collaborative discussions. This is also the premise of the action plan, to be a guideline for all actors in the County on how to work with adaptation. The efforts proposed in the action plan is not imposed, they are presented as recommended actions for the different stakeholders to take.

At the time the current action plan was published there were only two of the County's seven municipalities that had taken political action to work with adaptation. However, it is stated in the plan that there is considerable expert knowledge on problems that concerns adaptation in the County at the different municipalities, regional authorities, and the private sector (Sjödin, 2018, p.14). The key to access this expert knowledge is presented to be collaborative efforts by the different actors to raise awareness on why adaptation is needed, what measurements should be presented, and how implementation will happen. This is exemplified in the follow-up of the regional action plan:

“[own translation] The measurements proposed in the action plan should be followed up every year. This is part of the CABs mission; to coordinate the climate change adaptation work on a regional and local level...A revision and review of the measurements in the plan should happen, when the three target years have been reached. This is done by the CABs coordinator in collaboration with the County's actors” (Sjödin, 2018, p.11).

Further examples of how collaboration is the focus of achieving the goals and targets of the action plan can be found throughout the plan, such as in the following examples:

“[own translation] Collaboration across organisations and legislative borders is crucial for us to be able to adapt” (Sjödin, 2018, p. 12)

“[own translation] The efforts proposed to limit the risks, and consequences of natural disasters are spreading the knowledge about how the preparedness can increase and collaboration between stakeholders in the County increase. These collaboration partners, that have the potential to increase their collaboration, consists of many different parts of civil society” (Sjödin, 2018, p. 18)

“[own translation] We share many of the risks of climate change with our neighbouring counties. In order to increase our knowledge of these risks, increased collaboration between neighbouring counties is needed” (Sjödin, 2018, p. 18).

In addition to the focus on collaboration, the regional action plan continuously refers to how CAB provides guidelines and recommendations for the actors to follow, which is evident in the following two examples:

“[own translation] The measurements proposed shall be considered as guiding principles for the CABs continuous work. Measurements, where other actors are considered responsible, are viewed as a recommendation from the CAB to these different organisations” (Sjödin, 2018, p. 11).

“[own translation] The action plan should be used as a guideline for the continuous future and regional climate change adaptation work” (Sjödin, 2018, p. 7).

Collaboration is thus the main key for adaptation action according to the representative CAB, and as that the governmental arrangement of Sweden does not give the CAB mandate to impose adaptation action on local stakeholders, the focus is on the CAB recommending the adaptation action needed. As seen in the examples above, collaboration and guidance characterise how the CAB of Västernorrland approach climate change adaptation in the County.

In the internal climate risk assessment plan of the CAB of Västernorrlands operation, it is described how the regional action plan relates to the SDGs. SDG 11, sustainable cities and communities were identified as being connected to the target area landslides, erosion, and flooding that threaten communities, infrastructure, and businesses and the targets to increase collaboration between nearby CABs and to inform the public about climate change and the need for adaptation. Further, SDGs identified relate to the regional action plan was SDG number 2, 3, 12, 13 and 15 and the internal document shows how each of these goals related to the CAB of Västernorrlands adaptation measurements, something that was further emphasised in the interview with the CAB representative (Länsstyrelsen Västernorrland, 2020).

6.4. Perspectives on adaption at the County administrative board of Västernorrland.

In this section, the findings from the interview with the coordinator on climate change adaptation at the CAB of Västernorrland, Viveka Sjödin, is presented.

The linkage between the national level and the interpretation and agency at the CAB in the climate change adaptation field was not self-evident at first. The CAB representative indicates that there is a relatively high degree of space of manoeuvre concerning how Sjödin chose to work with adaptation. According to the CAB representative, there are no specific requirements on how the County board should work with adaptation and the CABs have not been required to explicitly include the national strategy, Agenda 2030, and the EU's adaptation strategy in the regional policies. However, Sjödin explains how she has chosen to work actively with implementing the national strategy and by doing so relevant aspects of the EU's adaptation strategy and the SDGs into the everyday work of the County board. The findings indicate that the institutional logic of Västernorrland CAB does not have any internal conflicts related to the authority's climate change adaptation strategy at present, referring to how the norms, values, rules, and different beliefs within the CAB is not seen as something that has been constraining the CABs ability to work with adaptation according to Sjödin.

However, there have been certain constraining factors related to the division of responsibility regarding climate change adaptation at the CAB. When asked about the level of leeway that the CAB has in constructing their regional adaptation policy Sjödin stated:

“[own translation] I feel like previously most of the responsibility regarding climate change adaptation issues were laid on my shoulders but because SFS 2018:1428 clearly states that all departments of the CAB that in any way is affected by a changing climate have to consider adaptation in operation. This has meant that I now have the leeway to go and knock on the office of the different head of departments and ask for a little support from other employees so that it (climate change adaptation) is no longer a topic just for me to consider (Interview, Sjödin)”.

This indicates that there have been certain constraints to the institutional logics of the CAB of Västernorrland in the past, in terms of certain behaviours that complicated Sjödin's work. The internal confusion on how the CAB works with adaptation has decreased since the 2018 decree on climate change adaptation was implemented. The decree improved the situation for how the Sjödin experiences the daily work with adaptation at the County administrative board. Thus, Sjödin believes that the decree created a more distinctly collaborative platform within the CAB to accomplish the different adaptation measures that have been proposed. This indicates that there have been some internal tensions within the specific strategic action field that the CAB is composed of, but that the decree has had a positive effect in terms of how the CAB work with adaptation internally. In contrast to the distinctness of the decree, there is a certain degree of uncertainty regarding who has the overarching responsibility for climate change adaptation action. Yet again the decree is mentioned to have clarified the division of responsibilities within CAB, but because it does not give CAB any legal mandate to demand that municipalities follow their adaptation plans, Sjödin states that there still is a level of uncertainty about who is responsible for what. Further issues of dealing with the problem because of the government arrangement of adaptation in Sweden were discussed by Sjödin when discussing an example where the CAB see the need to intervene in they consider that a municipality is planning to construct buildings in an area where there is a risk of flooding because of climate change:

“[own translation] ...For situations like that, I hope that our constituents and legislators consider the possibilities of giving us (the CABs) to further mandate so we can intervene and put a stop to things” (Interview, Sjödin).

“[own translation] ... The question of who has the responsibility to implement adaptation action is raised all the time. There is a feeling that everything is very unclear and it does not get better when you look to bring in the question of how you are supposed to explain the possible consequences of climate change... You explain that it could look like this according to RCP 8,5 but it could look different according to this scenario, so you understand that there

is a lot of uncertainty in it all... And it becomes difficult to deal with in concrete matters and so on” (Interview, Sjödin).

The first quote provides an additional example of how County representatives believe that the current national-level policy on adaptation does not provide enough support for CAB actors to implement the necessary adaptation action. It highlights the feelings that the County board representatives cannot influence the municipalities enough in certain cases, where recommendation and knowledge spreading initiatives is not deemed enough. The second quote illustrates that even though Sjödin previously stated that she believes it is clear what the CABs responsibility on adaptation is, there is still confusion on the overall responsibility of adaptation action. This, she explains, becomes most evident when dealing with a specific matter, such as a specific building approval application. Although, there is a certain level of frustration from Sjödin in the lack of clarity when it comes to who has the responsibility to do what in individual matters or issues, she highlights that the situation is improving and that she feels that the question of who bears the responsibility has been continuously improving since she started working in her role.

When describing the general adaptation work the CAB does and the collaborative efforts of the network for climate change adaptation in Västernorrland, the objects of the text were continuously referred to as we or us. In Howlett et al (2019, p. 63-65) research on problems associated with adaptation policy implementation, it is described how the dominant discourse in adaptation policies often excluded value judgements, knowledge and opinions of minority groups or marginalised people. In Västernorrland there is no explicit description of the CAB including marginalised voices in the adaptation process. However, Västernorrland CAB, the other three most northern CABs and, the Sami Parliament of Sweden, the Sámediggi, provide expert knowledge and financial support to the samebys⁸ of the regions about the creation of climate risk assessment analysis for their area. According to Sjödin, one of the reasons why the CABs provide this support is not because they have an obligation to do so, but because they have a close acquaintance working at the Sámediggi. Moreover, as explained in chapter 6.1, this is further cemented because the CABs have no legal obligation to consider indigenous knowledge or minority groups when creating regional adaptation plans.

Apart from the Sámediggi, the CAB of Västernorrland works closely with the regional network on climate change adaptation that is discussed in section 6.3. The interview with CAB provided additional detail to the approach and configuration of the network and provided insight into why it was formed. The

⁸ A sameby is an administrative and economic union related to reindeer husbandry rights consisting of a specific geographical area, regulated by the reindeer husbandry act (SFS 1993:36).

initial plan in 2014 was based on interviews and workshops with representatives of seven municipalities in Västernorrland and this process led to the regional network on climate change adaptation being founded:

“They (municipality representatives) thought the plan should be simple and not contain too many measurements. Rather it should be short and concise, so it is easily accessible for us since this is a new area for us to consider. So that is what I (CAB) did, and we did not have many measurements.... However, a couple of years later we had actually successfully implemented quite a bit of the measurement of the initial plan, so we realised that we needed more targets and measurements. Because of this, several different groupings were formed, and we created a regional network where I invite the municipalities and other actors [own translation, interview CAB]”.

The response from the stakeholders involved in the network has been positive since it started. The network works continuously throughout the year and has emphasized collaborative working to find the right type of targets and measurement, to implement them at the right level for everyone involved. The interview gave insight into how the meetings the network has both been a platform for collaborative efforts and engagement of new actors in the adaptation work in Västernorrland, which in turn as led to the formation of new networks:

“[own translation] The journey we have had working with adaptation has led to several digressions with us doing various activities and measurements based on the regional action plan. One example is the regional water supply plan which led to the entire “drinking water collective” being engaged.... For my part, the purpose of this was to safeguard the long-term security of high-quality drinking water in our region even with the impact of climate change. The actors thought this process had been fruitful, so the CAB created a drinking-water network where I participate to ensure that we consider adaptation questions specifically concerned with water security in that network” (Interview, Sjödin).

One of the biggest reasons why this process happened was that the decree on adaptation gave the CAB the obligation to work with adaptation in all sectors. Therefore, they now have a mandate to create adaptation plans for specific issues, even though the regional plan still provides a broad approach for adaptation. Collaboration is something Sjödin continued to emphasise throughout the interview as essential to be able to achieve adaptation action. Another example of this was when talking about increasing the knowledge of adaptation in the County and collaboration between municipalities on flooding assessment:

“[own translation] It is about finding where there is a need of knowledge on the effects of climate change and then reach out to the municipalities different types of administrators that I deem needs this knowledge (about adaptation)...Then it is really great if this work can be done in collaboration with different actors such as people working with emergency readiness, for instance about extreme rainfall because then we can work together to create a resilience

against this type of rainfall...So that this time Pellarsson's basement is not flooded for the 79th time" (Interview, Sjödin).

Through collaboration across different municipalities, sectors and professions, Sjödin emphasises that the targets of the action plan on adaptation and the national level targets can be reached through guidance and collaborative efforts. However, as indicated in the results from the analysis of the national strategy, and regional action plan, there are some decisions taken on the national level which give the CAB the authority to implement adaptation measurements in some contexts.

During the interview with Sjödin, she explained how there are several areas where it is possible for her as the CABs climate change adaptation coordinator, to have the power to work more actively with adaptative measurements. However, according to Sjödin, this is mostly connected to how Sjödin now can engage all bodies of the CAB in working with adaptation following the decree on authority's adaptation work that was ratified in 2018 as explained in previous paragraphs.

As mentioned in a previous section, on several occasions Sjödin expressed hopes of future national strategies on adaptation being expanded by the implementation of new legislation that gives further space and mandate for more comprehensive adaptation action by the CAB:

"[own translation] I hope that the next version of the national strategy will be more comprehensive and include more sectors and areas being affected by this (climate change). For example, I am thinking of the forestry industry connected to both the opportunities and challenges affecting them because of climate change. Because the idea behind the national strategy is that it should be updated every fifth year and revised depending on how the state of knowledge looks like and what has happened during the last 5 year, I am positive that this is not just pretty words so to say...I am thinking that the strategy will include more and more concrete tools for myself as an adaptation co-ordinator and my colleges at the CAB" (Interview, Sjödin).

Throughout the interview, the CAB representative gave insight into how government arrangement on adaptation in Sweden is moving forward, although there are several constraints for adaptation action as the topic is relatively new for the CABs and other actors and thus the knowledge on adaptation needs to be expanded. Moreover, the collaborative efforts for adaptation action could be expanded and helped with future strategies giving a further mandate for the CAB to work with adaptation implementation according to Sjödin.

In addition to the hitherto presented findings, when discussing the potential benefits of Västernorrland with warmer climate, Sjödin highlighted that:

"[own translation] It feels a little awful to say that one can take advantage of a negative thing as climate change but sometimes it can be good to provided that perspective. For example, when reaching out to politicians one wants to provide something that could be considered to be a factor of growth because it is easier to get them (politicians) to listen to you if you

highlight that this is something that is not only a financial cost but an opportunity too (Interview, Sjödin).

This was one of the few indications on how the CAB, that is a government agency with appointed politicians, in certain contexts feel the need to convince politicians to achieve the tasks assigned to the CAB in terms of how they work with adaptation. In contrast, to the other parts of the interview, where the CAB representative had a leadership role and thus, was in a position of power, directing, guiding, and recommending other CAB workers and local actors on how they need to consider adaptation when talking to politicians the narrative was different. Instead of being in a leadership position, although with an emphasis on action through collaboration, Sjödin sometimes needs to focus on the positive aspects of climate change to convince politicians to commit to adaptation action. The emphasis on the role that politics plays in the degree to which public servants in Västernorrland can work with adaptation was highlighted in the discussions with municipality representatives.

6.5. Perspectives of local level adaptation

As discussed in chapter 4.1.4, the national strategy clearly states that municipalities have a central role to play in Sweden's adaptation work (Miljödepartementet, 2018, p. 46-47). Interviews with a municipality representative from Timrå municipality along with email correspondence with the sustainability strategist Sofia Larsson, working for Kramfors municipality gave perspectives on adaptation at a local level. In this section, the results of those interactions are presented.

According to the Kramfors municipality representative, the main obstacle to adaptation action by municipalities is time and financial resources. Because small, primarily rural municipalities have a steady decline in population numbers in Västernorrland, the tax income is in decline. Therefore, municipalities do not have the budget to divert enough resources to the people working with mitigation questions and no resources to employ people working with adaptation questions. Because of this, Larsson believes that the only way for small municipalities to be able to work sufficiently with adaptation is full financial support from the Swedish government or the Environmental Protection Agency to give municipalities the financial resources to employ people working specifically with climate change adaptation.

The interview with Stina Reinhammar, planning architect at Timrå municipality, gave perspectives on how Timrå municipality approach adaptation. Like the experiences of the other municipality representatives interviewed and previous research Reinhammar felt that more could be done at the local level

when asked about to what degree adaptation measurements are considered by the municipality:

“[own translation] During my education I have been interested in climate change adaptation. So, when I know began to work in this position, I did feel like it (adaptation) needs to be given more space and it is something that I try to incorporate. I have included a new heading, a climate change heading, which is something I think we are obligated to have in our planning description under possible consequences. Where we write the possible consequences of the plan can have on the climate and how the climate can impact the plan in the future (Interview, Reinhammar, 2021).

This indicates that the local actors have a very high degree of leeway in whether considerations into how the municipality can adapt their work in the light of climate change in municipalities that have not made political decisions to actively work with adaptation. In addition to this, the results of the interview with Reinhammar indicate that adaption is not something that is prioritised by the local level politicians at Timrå municipality:

“[own translation] From what I have experienced adaptation is not one of the most important issues in the municipality. Now, the primary focus is that we have Norrland’s best entrepreneurial climate, so there is a lot of effort on that, also... So I believe it (adaptation) is further down the list. Because of this it is up to us civil servants to, in our roles, promote adaptation and try to create space for it in our planning descriptions along with other things. I believe it is important to include climate change adaptation even though it is something that is somewhat forgotten, it should be bashed (tjoffas) in” (Interview, Reinhammar).

Adaptation is not then a question of great concern in Timrå municipality. The lack of climate change adaptation action in many Swedish municipalities is something that has been mentioned in previous research (Kristianssen & Granberg, 2021, p. 7). When asked what it would take for adaptation to more prioritised by the municipality Reinhammar believed that:

“[own translation] Perhaps a specific the creation of a specific group working with adaptation could increase the effort to adapt in the municipality, where the group works with implementing adaptation in all areas... The group would need to discuss and collaborate with the politicians, because, in the end, it is the politicians that make the decisions and by implementing it (adaption) more on the political level, such as in the municipality’s steering model, adaptation would be given more space” (Interview, Reinhammar).

Although she did not emphasise the financial aspect that Sofia Larsson did, Reinhammar emphasised the need to convince the municipality councils politicians that there is a need for adaption on the local level in Västernorrland. This could relate to what Viveka Sjödin said about it being hard to engage politicians in working with adaptation if you only present it as something

negative. The possible benefits of a warmer climate in Västernorrland were also mentioned by Reinhammar:

“[own translation] During the three latest comprehensive plans where I have been present, there has been a focus on the negative effects of climate change. But I absolutely think that we should try to consider what the possible positive effects of climate change is, even though I believe that the way our climate is changing is very horrible, one cannot entrench oneself too deep in the negative consequences. One needs to consider the positive effects of climate change even though you want to stop it all” (Interview, Reinhammar).

The positive effects of Sweden’s changing climate are mentioned several times in the national strategy (Miljödepartementet, 2018) and the regional action plan (Sjödin, 2018). Moreover, it was something that Sjödin mentioned in how the CAB works with adaptation. Even though no indications of local-level initiatives on positive effects of climate change were evident on the local level, it is clear that representatives from all levels of the Swedish government believe that it is important to not only focus on the negative effects of climate change when working with adaptation. Both the national strategy, regional action plan and the interview with the CAB representative showed how collaboration is considered key to adaptation and this was also mentioned on the local level.

During the interview with Reinhammar, the positive experience of working together in the regional network for climate change adaptation was mentioned. Being relatively new to the role, she had not yet participated much in the regional network at the time of the interview, but still expressed the important role this network can play for regional collaboration on adaptation:

“[own translation] From one meeting that I have so far participated in, I thought it was positive how they provided an update on what is happening in Sweden’s adaptation work, what one should consider when working in terms of adaptation and such things...The meeting is very informative now when this is something new and it is a platform to ask questions and be provided support on how we can work with climate adaptation” (Interview, Reinhammar).

The platform for collaboration that the network enables is thus considered a valuable resource by Reinhammar in how she can work with adaptation on the local level. Moreover, the guidance provided by the CAB on adaptation is considered as something positive and Reinhammar revealed that from her perspectives, she is positive that there is a possibility to be part of such a network for her as a local actor working with adaptation.

Summary.

In sum, this chapter has revealed that there are many similarities in how climate change adaptation is approached between the different government levels

analysed. Although the results of the interviews indicate some of the challenges facing regional and local level actors working with adaptation in Västernorrland, there are constructive collaborative efforts being made to implement adaptation policy. There is a high degree of leeway in how to work with adaptations which bring opportunities to contextualise the adaptation work. However, the results show that there are several constraining factors that influence to which extent CAB and municipality workers can work with adapting Västernorrland County against the climate crisis. These results will be analysed through the identified discourses on adaptation in the following chapter.

7. Analysis of the discourses.

In this chapter, the results of the study are analysed to answer the study's research questions. The results are divided into sections that reflect the different discourses on climate change adaptation that have been identified. Thus, the research questions are answered with the theoretical approach chosen for the study.

7.1. Action through guidance.

The Swedish strategy on climate change adaptation is at its core configured to be a guiding principle for actors across all levels to choose to follow. The CABs are commanded to work with adaptation internally, municipalities need to consider the effects of climate change to some extent according to the Swedish Planning and Building Act (PBL) and there is a narrative of the national government that expects all actors to actively work with Agenda 2030. However, the discourse of the policies analysed and the perspectives from interviewed public servants focus on adaptation action through guidance, and not through strict demands or directives.

The findings indicate Sweden's national government stance on adaptation has been to achieve the adaptation targets through guidance since before the current national strategy was implemented in 2018. Since then, the national level of government has continued to develop its strategies and decree with emphasis on the state authorities acting as guides for the different actors working with adaptation, such as municipalities and people from the private sector. Thus, there is an expectancy of recontextualization from the national level, as the government expects regional- and local actors to implement the national strategy to their adaptation planning processes.

The guiding discourse evident especially in the national strategy is emphasising that it is the CABs and other state authorities that should guide actors across the country in how to work with adaptation. However, the narrative of the national strategy clearly illustrates how the national government could be considered to be the main actor of the guiding discourse. This is because the national strategy purpose is to be a guiding document for all directed to work with adaptation in Sweden. The guiding discourse was unclear in parts, by both the

CAB and municipality representatives interviewed. However, here the Swedish government has tried to create a better understanding of who is responsible for what by developing the SMHI controlled website for climate change adaptation mentioned. None of the people interviewed highlighted that this platform was helpful for them in their daily work with adaptation, although, four of the people contacted, referred to the adaptation website in order to provide additional information about the institutional arrangement of adaptation in Sweden.

In Västernorrland, the CAB representative has chosen to try and implement the national strategy in their adaptation planning. This indicates there is a degree of recontextualization in terms of how the CAB actively work with incorporating the content of the national discourse on adaptation to the CAB of Västernorrland's adaptation efforts. However, the results also indicate a very high degree of leeway in how the CAB work with adaptation in Västernorrland and most of Västernorrland's adaptation planning had been started before the strategy was developed. Even though the national strategy was finalised at the beginning of 2018 it is considered largely unknown to most regional actors according to the CAB representative.

7.1.1. Knowledge-raising initiatives.

To reach the targets of the different institutional level adaptation policies in Sweden the problem is often approached through a discourse that is focussed on increasing the knowledge about adaptation, and why it is important, and thus creating a self-interest for actors to engage in initiatives related to climate change adaptation. This was highlighted by CAB in their regional action plan and Sjödin continued to emphasise this during the interview with her. The findings indicate the legitimation of the CAB as an actor with the authority to be responsible for the regional adaptation work in Västernorrland. Moreover, the role of the climate adaptation coordinator establishing and leading the collaborative efforts in Västernorrland shows how the coordinator have a high degree of agency within the CAB, and across the other strategic action fields at play in the County's adaptation efforts. There were no disputes concerning the CABs legitimacy, something which was further evident in the approach of achieving action through knowledge-raising initiatives with the expectancy of influencing the other actors in the region. The findings show how the agency of the CAB was not questioned by any actor in the analysed texts. The discourse of guiding other actors closely relates to the following discursive practice, which strongly emphasises collaboration.

7.2. The key is collaborative efforts.

The results from the interviews indicate that the dominating discourse on a regional level is based on collaboration between the actors involved in climate change adaptation in Västernorrland. It is, however, necessary to clarify that the actors that have been given space to participate in Västernorrland's strategic work towards adaptation action are the stakeholders the CAB has selected. The view the CAB of Västernorrland representative gave in the interview is that there are constant productive collaborative efforts for adaptation action in the County, especially by the regional network on adaptation. The findings suggest that the regional actors have a large impact on the local actor's adaptation work, and there is a want for laws and regulations that give regional authorities a mandate to dictate the work of municipalities.

The analysis of the national strategy also revealed an emphasis on action through collaboration between different state authorities, municipalities, and private actors. All the actors have a high degree of leeway concerning the adaptation of their business or operation to create resilience against climate change, which is something that the analysis of the national strategy showed. The national-level adaptation policies do not give the regional state representative much mandate to impose adaptation action, rather, the policies emphasise that the CABs and other state authorities should develop guidelines, support network and other platforms for collaboration to achieve the national adaptation targets. These results are comparable to the results of the study by Jurgilevich et al (2019), which identified that the national level discourses on climate change adaptation have clear policy targets, but that the targets have not been legislated, which means that there are no legal requirements for adaptation action. In addition to this, Keskitalo's analysis of climate change adaptation in the region of Västra Götaland from 2010 in comparison to the results of this research because, it also highlights how cooperation dominates the political landscape around adaptation in Sweden. The collaborative discourse is highly dependent on the social capital of the involved actors. Even though its CAB's task to lead the regional collaboration on climate change adaptation, there is no distinct framework of how the process should look like and who to include, apart from the municipalities and regional expert authorities. Thus, the degree to which the regional adaptation implementation is a collaborative process between actors involved in adaptation depends on the social capital of the CAB's adaptation representatives and influences their access to power. What is interesting to note from the emphasis on collaboration is that the efforts to work together across different levels show how the different social fields are interrelated. Even though municipal self-governance, in theory, give the municipalities great freedom in how they work with adaptation, the results of this study indicate that in practice the different fields involved closely relate to one another through the networks established by the CAB.

7.2.1. Adaptation through integration.

The results show how much of the adaptation actions proposed, especially at the local and regional level, focus on integrating adaptation measurements into already existing policies. The problem is believed to affect all sectors of society and thus, every area that municipalities and CABs have a mandate over is expected to consider adaptation measurements. The transitivity of the analysed text reveals that all the analysed actors consider that adaptation action is reached supposed to be reached by incorporating adaptation measurements into already existing policies and infrastructure.

Moreover, the results show that there is an interest from all levels of government to integrate the SDGs into their planning and thus, to consider Agenda 2030 when working with adaptation. This discourse is especially evident in the national strategy, where the integration of Agenda 2030 and the EU's adaptation strategy into Sweden's adaptation initiatives is emphasised. Thus, the emphasis on UN and EU policy integration on the national level in Sweden along with both the CAB and municipalities expressing an ambition to comply with Agenda 2030 give the EU and UN some level of influence over what type of adaptation measurement there is in Västernorrland. Because of this, the levels of government active in the adaptation work in Västernorrland are impacted by fields found on an international scale.

7.3. Access to power.

The hitherto mentioned discursive elements of the text have revealed how the different actors regard adaptation action and how they chose, or are, delegated to approach the problem. This closely relates to who has the power to act in this context and how different actors across different levels may access this power. Because the narrative about adaptation work in Västernorrland is on action through state authorities guiding other actors and working collaboratively with them to adapt, the responsible CAB representatives are in a position of power. Even though the results show that in for instance the regional network for climate change adaptation in Västernorrland, all actors work collaboratively it is still the CAB that instigated the conversations and is leading the process. Moreover, it is the CAB representatives that have the mandate from the government to work with creating collaborative networks for regional adaptation initiatives. Another effect of this arrangement is that it is probably the state that has the highest most access to power in the context of adaptation, but that the state, through national strategies and decrees has diverted a lot of the responsibility and thus also power, to the CABs and other expert authorities. In addition to this, the EU and UNFCCC have

indirect access to power, as the discourse on adaptation in Sweden is heavily influenced by Agenda 2030 and the EU's adaptation strategy.

When discussing who has the access to power for adaptation action in Sweden, it is important to remember that Fairclough emphasises that to analyse access there is a need to analyse where there is a lack of access to power (Fairclough, 1989, 62-68). The actors that have the most potential to influence the adaptation efforts in Västernorrland are those actors that have the formal mandate and responsibility to work with adaptation. Even though private persons may choose to adapt their land to be more resilient towards climate change, it is the actors that have the political mandate that has access to power in making decisions on a larger scale. In terms of this study, the results show that actors such as the CAB have discussions and interactions with different actors from the private sectors about adaptation. However, the ability to act on a larger scale is limited because of formality, as the formality around adaptation means that there are a limited number of actors with the mandate to act. Hence, because of the government arrangement of adaptation in Sweden, there is a lack of opportunities for actors outside of the public sector to take part in the decision-making processes in regard to adaptation implementation in Västernorrland. This highlights that in general it is within the different institutions or fields studied where the actors that have the most power to influence the adaptation efforts of Västernorrland. The societal, cultural and historical context of how the different government levels of Sweden have developed, means that at present it is in these fields where both the power and responsibility to adapt is. There is, of course, the possibility for all citizens to engage themselves politically to influence the adaptation policies, but such political processes often take time which could be problematic as there is an urgent need for adaptation action at present.

7.4. Constrains for adaptation action.

Both the data collected from the documents and the transcribed interview material indicate that there is a feeling or belief that considers climate change adaptation as something new and unfamiliar leading to a question raised on the need for adaptation action. Moreover, this discourse constrains the actors tasked with working with adaptation because of a lack of mandate given to adaptation experts to achieve adaptation action. This has been specifically evident at the CAB of Västernorrland, where the institutional logics on adaptation have been constrained by the lack of interest on the subject from anyone that is not specifically tasked with working with adaptation. However, this discourse became less evident at the CAB after the decree on the institution's adaptation work was passed in 2018.

The problems caused by the climate crisis is framed as an issue that implies there is a critical need for adaptive measures in both the national strategy, regional

action plan, and by all the CAB and municipality representatives that were interviewed. However, the results of this study indicate that not enough is being done to create a politics of adaptation in Västernorrland. The discourses identified as cooperative and collaborative showed that there is progress being made on a regional and local level, but that the governmental arrangement of Swedish adaptation policy constraints for the level of adaptation action considered to be necessary.

The results of this study showed how all the interviewed actors have a genuine interest in incorporating Agenda 2030 in their efforts to adapt and the national strategy continuously referred to and cited the SDGs and the EU's adaptation strategy. However, the results show that there are no obligations for the CAB to include the SDGs in their adaptation strategy. Instead, the actors may choose if they are going to work with implementing Agenda 2030, the EU's adaptation strategy and to some extent, even the targets of the national strategy. As has been presented by the climate change adaptation coordinator of CAB Västernorrland, Viveka Sjödin has actively tried to include Agenda 2030 and the national strategy in how she works with adaptation.

The interview with the municipality representative indicated that the biggest constraint for adaptation action by the municipality is that not enough of the municipalities' budget is invested in adaptation measurements. One correspondent considers financial support from the government as something necessary for a small rural municipality to have the resources to implement climate change adaptation to their operation. This is in stark contrast to the narrative of the Swedish government, articulated in the national strategy, where it indicates that the municipalities must implement climate change adaptation in their planning and decision-making processes. In the national strategy, there is no mention of the need for financial support for municipalities, such as the rural municipalities of Västernorrland. Instead, the narrative of the national government is dictating the municipalities to work with adaptation, whereas the perspective gained from the interview with the municipality representative is that rural municipalities with declining populations, do not have the financial capital to work with adaptation if they are not given financial support from the state to specifically work with adaptation.

To conclude this section, there are constraining factors to adaptation action within and between each of the studied fields. The problem has been found to be framed to be something that needs to be addressed immediately and there is an interest to do so. However, the apparent lack of resources available to invest in more adaptation efforts, often expected to come from another government level, shows that at present not enough is being done in terms of working with adapting Västernorrland to the climate crisis.

Summary.

The analysis showed that there is an overlap between the different discourses found highlighting the interdiscursive elements of the analysed text. The meaning of this is twofold as the same discourses both occur across the different analysed government levels and have clear relationships between each other in terms of similarities between them. In addition to this, the interdiscursivity found could relate to how there is a narrative in Sweden of wanting to cooperate across different levels. There are similarities between the identified discourses and it is clear that they are both enabling and constraining the extent to which the subjects of this study can work with adaptation in their professional roles in Västernorrland.

8. Discussion.

This chapter discusses the possible implications of the findings of the thesis along with how the results relate to previous research about climate change adaptation. The possible limits of the study are discussed and what the recommended topics of future adaptation research in Västernorrland are.

On a national level, apart from being a member of the EU and UN, the reliance on international policies could be linked to Sweden's long history of wanting to be engaged in diplomacy and the establishment of collaborative efforts on an international level. Thus, the already existing context, along with the fact that Sweden is often being considered a leading example when it comes to questions of mitigation, could, for instance, be one of the reasons why there is such a high reliance on international adaptation policies. How the influence of UN and EU adaptation policy on Sweden will look in the future is uncertain as the situation is ever-changing. One example of this is the new 2021 EU strategy on climate change adaptation, that if decided on, will provide more support for local actors in accordance with the EU's new goal of more local adaptation action (EU, 2021). If ratified in June 2021, this strategy will provide more financial support to increase local resilience against climate change through funds such as the Recovery and Resilience Facility (EU, 2021). This could change the situation for actors wanting more adaptation action in Västernorrland, especially in the rural municipalities with less financial resources. However, here I think that knowledge raising initiatives is essential because the perspective I got from my interactions with municipality representatives is that EU funding is not something that is generally considered when talking about local adaptation.

The results and analysis indicated that the different discourses on adaptation evident in the empirical material emphasise cooperation and recommendations to be followed. However, it is necessary to emphasise that a reason why the cooperative discourse was so evident in the CABs adaptation work is likely because that is the extent to which the CAB has the mandate to work with adaptation. Because of the current legislation on adaptation, action from the CAB can happen through education, cooperation, recommendations, and through leading by example inspire action from actors involved in Västernorrland's climate adaptation. If the CAB had more mandate and resources to directly work with implementing climate change adaptation measurements it is likely that the

narrative in the regional plan would emphasise more direct action. Furthermore, this is something that Sjödin emphasised when talking about the CABs given a further mandate for adaptation action in future national strategies and decrees.

As noted, SMHI published a new report on the progress of all of Sweden state authorities' climate change adaptation policy implementation in late April 2021. Because of the timeframe of this thesis, the results of that report were not considered. It is, however, worth noting how the conclusion of that report relates to my analysis. Similar to what Sjödin expressed about how Västernorrland CAB has come a long way since starting to work with adaptation, SMHI concluded that the authorities have made good progress but that there is still a considerable amount of progress needed to sufficiently adapt to expected and current climate change (Hjerpe et al, 2021).

In relation to this study, which focussed on what is done on the County level, the analysis showed that there is an interest in the CAB of Västernorrland to be given additional mandate and resources to work with adaptation action in the County. Furthermore, the analysis gave the perspectives of the regional network on adaptation and similar collaborative efforts in Västernorrland have been successful and appreciated by all actors that I have been in contact with. In the light of this, I would argue that the infrastructure for sufficient adaptation action in Västernorrland is already there through the existing collaboration and networks between regional and local civil servants, along with private actors such as LRF Västernorrland. In Västernorrland part of the problem is the lack of mandate for adaptation action by the CAB and inadequate financial resources for action in many rural municipalities. The institutional arrangement of adaptation in Sweden thus has the potential to adapt to a level in Västernorrland that would achieve the targets of the SDGs, but because the financial state of the municipalities of the region is overall poor further support from higher institutional levels is needed. This becomes especially evident in a County like Västernorrland, which has faced outmigration of people and had the biggest decrease in population of any Swedish County in 2020 (SCB, 2021), resulting in lower tax incomes in the County's municipalities. One of the reasons why adaptation is not being prioritised by decision-makers in Sweden and Västernorrland specifically could be related to the conclusions of Clar & Streuer's study. As mentioned, they found a correlation between the degree to which adaptation action happens and the level to which an area has already experienced negative effects of climate change. In Västernorrland's case, the County has so far been relatively spared from the negative consequences of climate change and thus, the sense of urgency needed for set decisions about adaptation action does not exist.

The need for adaptation on a local level is certainly important, but local conditions are all part of the global climate system. By stating that adaptation is local I believe that there is a risk that adaptation measurements do not have a

holistic approach where local events and conditions are seen as part of larger systems. Because what happens in different ecosystems is not isolated to separate spaces and therefore, the need to examine climate change adaptation policies on multiple levels becomes evident. I agree with the conclusions from Nalau et al's study (2019, p. 339) claiming that it is problematic that there often is a devolution of power from the national to lower levels of government in terms of the responsibility of adaptation action. Similarly to Nalau's study, I found that the lack of financial resources at the local level severely limits municipalities with weak economies ability for adaptation action. This was evident in how the Kramfors municipality representative expressed that rural municipalities in Västernorrland need external funding from the state to have the resources to implement adaptation action. In 2020 there was a change in the Swedish Planning and Building Act (PBL) with the result that the CAB of Skåne and Stockholm are required to create initiatives to adapt the counties to counter the effect of climate change (SFS 2020:76). Considering how the CAB of Västernorrland representative expressed a wish for the national government to give the CAB more mandate to work with adaptation action, it is interesting that this change in legislation is voluntary for the other 19 counties. In addition to this, the results of this study indicate that the biggest barriers toward adaptation action are in the institutional arrangement of how the problem is dealt with in Sweden. The municipalities display a lack of effort to adapt in the municipalities even though all municipality representatives interviewed showed that they have skills about how to adapt on the local level and is interested in increasing the adaptation work of each municipality. In this sense, my findings divert from the cases of New Zealand, Vanuatu and Australia which Nalau et al (2019) studied, as my findings do not indicate a lack of skills at the local level, only a lack of sufficient resources for the skilled personnel to act. Although the findings of this study provide an insight into the climate change adaptation happening in Västernorrland, additional research is needed.

8.1. Future research.

Because of the relatively small sample size of this study, caution must be applied, as the findings of the study might not be representative. The conclusions are based on the identified discourses which give insight to some perspectives about the adaptation process in Västernorrland. Several questions remain unanswered at present. Because there were only a few municipality representatives available for interviews for this research project, there a need for future studies about the local-level experiences of adaptation action in Västernorrland. Future studies on the

current topic are therefore recommended, with more focus on the local scale. Because of this, I suggest future studies of existing perspectives of local levels, such as municipality representatives, farmers, fishermen and other individuals, adapting their operation due to the climate change facing Västernorrland. In addition to this, future research may approach the problem differently by for instance analysing local-level adaptation by examining if and how the grants and funds for adaptation action are used by local actors in Västernorrland. Moreover, the complete lack of research and policies which relate climate refugees to adaptation policy is something that needs to be addressed by future research. The need to consider climate refugees in adaptation policy for countries in the Global North is something that has been highlighted by the International Organization for Migration (IOM, 2009) and none of the documents analysed and people interviewed mentions, climate refugees, when discussing climate change adaptation. Because the IPCC and other climate research indicate that there will continue to be a rise of climate refugees in the coming decades, it would be interesting for future researchers to study how an increase of climate refugees relate to the regional climate change adaptation measurements in Sweden.

9. Conclusions.

This thesis set out to answer the following research questions:

1. How do the decisions on climate change adaptation, taken on different institutional levels, frame the actors' strategies and practices on a regional level, working with the regional approaches to climate adaptation?
2. What leeway do the actors have and how is that leeway used in practice?
3. What are the challenges of implementing Sweden's national policy of climate change adaptation on a regional and local level in the Swedish County of Västernorrland?

To conclude, this section briefly answers the research questions of the thesis. Concerning the first research question, the findings indicate that the actors working with adaptation on an administrative level in Västernorrland are influenced by decisions made on adaptation at the UN and the Swedish parliament. However, this is because of the high level of leeway that the actors have in choosing how to construct their own regional and local adaptation measurements, and not through decisions made on national and international institutional levels. The level of leeway that the actors have is high for both CAB representatives and municipality representatives, although the cause for this is different. The CABs have been tasked to work with their respective County's climate change adaptation, whereas the municipal self-government of Sweden means that municipality representatives adaptation work is primarily decided by the municipality government.

The main challenge of implementing Sweden's national strategy of climate change adaptation is that there is not enough mandate given to the CAB so that the County board of Västernorrland can work more actively with adaptation action. Similarly, there were indications from municipality representatives that there are simply not enough financial resources for the small rural municipalities to actively work with adapting their municipalities to the effects of climate change. Concerning this, this highlights one of the biggest constraints for adaptation action, which is that each level of government tends to fault another level of government for the lack of adaptation action. The national government highlights regional and local action as the key actors for implementing adaption

policies, whereas the CAB representative wants the government to give the CAB further mandate for adaptation action and, municipality representatives claim local adaptation action will only happen with financial support from the government. However, the insight this thesis provides indicates that even though there are constraints in Västernorrland's adaptation progress, the existing network, and collaborative efforts for adaptation action in the County highlight that there is an infrastructure in place for building a region that is resilient towards climate change. This study has shown that if the actors responsible for adaptation in Västernorrland is given sufficient mandate and financial support for adaptation action, the collaborative efforts to create resilient communities could lead to a sustainable future for the County which avoids the catastrophic effects of the climate crisis.

References.

- Bacchi, C.L (2009). *Analysing policy: what's the problem represented to be?*. Frenchs Forest, N.S.W.: Pearson.
- Bolin, N, Nyhlén, S & Olausson, P.M (eds.) (2015). *Lokalt beslutsfattande*. 1.ed. Studentlitteratur: Lund.
- Bourdieu, P & Johnson, R (1993). *The Field of Cultural Production: essays on art and literature*. Cambridge: Polity.
- Bryman, A. (2012). *Social Research Methods*. 4.ed. New York: Oxford University Press.
- Clar, C & Steurer, R. (2019). Climate change adaptation strategies at different levels of government. I: Keskitalo, E.C.H & Preston, B.L (eds) *Research handbook on Climate Change Adaptation Policy*. Cheltenham: Edward Elgar Publishing Limited. 310-326.
- European Commission (2021). *Communication from the Commission to the European Parliament, The Council, The European economic and social committee and the committee of the regions: Forging a climate-resilient Europe - the new EU Strategy on Adaptation to Climate Change*. Brussels: European Commission.
- Fairclough, N. (2013). *Critical discourse analysis: the critical study of language*. 2. ed. Abingdon: Routledge.
- Grenfell, M.J. (2014). *Pierre Bourdieu: Key Concepts*. Taylor and Francis.
- Goodwin S. (2011). *Analysing Policy as Discourse: Methodological Advances in Policy Analysis*. In: Markauskaite L., Freebody P., Irwin J. (eds) *Methodological Choice and Design. Methodos Series (Methodological Prospects in the Social Sciences)*, vol 9. Springer: Dordrecht.
- Hjerpe, K., Sjöberg, T., Englund, B., Jonsson, A. (2021). *Myndigheternas arbete med klimatanpassning 2020*. *Klimatologi* 2021:62. SMHI.
- Howlett, M., Mukherjee, I., Fritzen, A.S. (2019). Challenges associated with implementing climate adaptation policy. I: Keskitalo, E.C.H & Preston, B.L (eds) *Research handbook on Climate Change Adaptation Policy*. Cheltenham: Edward Elgar Publishing Limited. 50-68.
- Härnösands kommun. (2021). *Vår plan för framtiden*. Härnösands kommun. https://www.harnosand.se/kommun--styrning/framtidens-harnosand/hallbar-utveckling/var-plan-for-framtiden.html?lptoggle=svid12_128670d31677a35e23057d8%2C%2Csvid12_6a8a06c21665e24ee1f89ae2 Retrieved: 2021:06:03.

- Inglis, D & Thorpe, C. (2019). An invitation to social theory. Second edition. Cambridge: Polity Press.
- IOM. (2009). Migration, Environment and Climate Change: assessing the evidence. International Organisation for Migration. Geneva: Switzerland.
- IPCC. (2014). Climate Change 2014: Synthesis Report. Contributions of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds)]. IPCC, Geneva: Switzerland.
- Jørgensen, W, M. Phillips, L. (2002). Discourse Analysis as Theory and Method (1st edition). London: SAGE.
- Jurgilevich, A., Groundstroem, F., Klein, J., Räsänen, A., Juhola, S., (2019). The emergence and institutionalization of national adaptation policies. I: Keskitalo, E.C.H & Preston, B.L (eds) Research handbook on Climate Change Adaptation Policy. Cheltenham: Edward Elgar Publishing Limited. 212-227.
- Keskitalo E.C.H. (2010) Adapting to Climate Change in Sweden: National Policy Development and Adaptation Measures in Västra Götaland. In: Keskitalo E. (eds) Developing Adaptation Policy and Practice in Europe: Multi-level Governance of Climate Change. Springer: Dordrecht.
- Keskitalo, E.C.H & Preston, B.L. (2019). Introduction: Understanding adaptation in context of social theory. I: Keskitalo, E.C.H & Preston, B.L (eds) Research handbook on Climate Change Adaptation Policy. Cheltenham: Edward Elgar Publishing Limited. 2-21.
- Klimatanpassning. (2021). Myndigheternas regeringsuppdrag 2021. SMHI. <https://www.klimatanpassning.se/vem-gor-vad/vad-gor-myndigheterna/myndigheternas-regeringsuppdrag-2021-1.168883> Retrieved: 2021:06:08.
- Kramfors kommun. (2021). Hållbara Kramfors. <https://www.kramfors.se/kommun--demokrati/om-kommunen/hallbara-kramfors.html> Retrieved:2021:06:03.
- Kristianssen, A.C. & Granberg, M. (2021) Transforming Local Climate Adaptation Organization: Barriers and Progress in 13 Swedish Municipalities. Climate 2021, 9, 52.
- Lindström, K (2020). Handlingsplan för grön infrastruktur i Västernorrland. Länsstyrelsen Västernorrland. Härnösand: Länsstyrelsen Västernorrland.
- Länsstyrelsen Västernorrland & LRF Västernorrland (2015). Regional livsmedelsstrategi för Västernorrland. Macklean.
- Miljödepartementet (2018). Nationell strategi för klimatanpassning. (Regeringens proposition 2017/16:153). Stockholm: Regeringskansliet.
- Miljödepartementet (2007). Sverige inför klimatförändringarna- hot och möjligheter. (Statens offentliga utredningar SOU 2007:60. Stockholm: Miljödepartementet). Stockholm: Regeringskansliet.

- Naess, O, L & Twena, M. (2019). Local adaptation governance: examining power relations. I: Keskitalo, E.C.H & Preston, B.L (eds) Research handbook on Climate Change Adaptation Policy. Cheltenham: Edward Elgar Publishing Limited. 347-364.
- Nalau, J., Lawrence, J., Burton, D. (2019) The role of governance in sub-national adaptation policy implementation. I: Keskitalo, E.C.H & Preston, B.L (eds) Research handbook on Climate Change Adaptation Policy. Cheltenham: Edward Elgar Publishing Limited. 327-346.
- Nylén, L., Asp, M., Berggreen-Clausen, S., Berglöv, G., Björck, E., Axén Mårtensson, J., Ohlsson, A., Persson, H & Sjökvist, E (2015). Framtidsklimat i Västernorrlands län – enligt RCP- scenarier. SMHI. Klimatologi 2015:35.
- SCB (2021). Population statistics. Statistics Sweden.
<https://www.scb.se/en/finding-statistics/statistics-by-subject-area/population/population-composition/population-statistics/>
 Retrieved:2021:06:06.
- SFS 2018:1428. Förordning om myndigheters klimatanpassningsarbete. Stockholm: Miljödepartementet (17/18:163). Stockholm: Regeringskansliet.
- Sjödin, V (2018). Regional handlingsplan för Klimatanpassning i Västernorrlands län. Länsstyrelsen Västernorrland. Härnösand: Länsstyrelsen Västernorrland.
- SKR (2021). Klimatanpassning i den fysiska planeringen. The Swedish Association of Local Authorities and Regions.
<https://skr.se/skr/samhallsplaneringinfrastruktur/planerabyggabo/klimatanpassning.1665.html> Retrieved: 2021:03:21.
- SMHI (2021a). Klimatanpassning. SMHI. <https://www.klimatanpassning.se>
 Retrieved: 2021:01:31.
- SMHI (2021b). Vårflod.
<https://www.smhi.se/kunskapsbanken/hydrologi/vattenforing/varflod-1.7208> Retrieved: 2021:01:18
- SMHI (2021c). Klimatanpassning av renskötseln – Ängeså sameby. SMHI.
<https://www.smhi.se/klimat/klimatanpassa-samhallet/exempel-pa-klimatanpassning/klimatanpassning-av-renskotseln-angesa-sameby-1.168495> Retrieved: 2021:03:26.
- Sollefteå kommun. (2021). Agenda 2030. <https://www.solleftea.se/bygga-bo--miljo/hallbara-solleftea/agenda-2030> Retrieved:2021:06:03.
- SOU 2007:60. Sverige inför klimatförändringarna- hot och möjligheter. Stockholm: Miljödepartementet.
- Sundsvalls kommun. (2019). Agenda 2030. Sundsvalls kommun.
- Timrå kommun. (2021). Hållbar utveckling.
<https://www.timra.se/kommunpolitik/hallbarutveckling.4.714dad16d46439ef926c5.html> Retrieved:2021:06:03.

- United Nations Framework Convention on Climate Change (2021). The Paris Agreement – What is the Paris Agreement?. <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement> Retrieved: 2021:02:24.
- Wacquant, L (ed.) (2005). Pierre Bourdieu and democratic politics: the mystery of ministry. Cambridge: Polity.
- Ånge kommun (2021). Agenda 2030 – vad är det och vad innebär den för Ånge kommun?. Ånge kommun. <https://www.ange.se/om-webbplatsen/nyhetsarkiv/nyhetsarkiv/2020-02-13-agenda-2030---vad-ar-det-och-vad-innebar-den-for-ange-kommun.html> Retrieved:2021:06:03.
- Örnsköldsvik kommun. (2021). Kommunens vision och mål. <https://www.ornskoldsvik.se/om-kommunen/organisation-och-styrning/sa-styrs-kommunen/kommunens-vision-och-mal> Retrieved;2021:06:03.

Unpublished Material.

- Länsstyrelsen Västernorrland (2021). Handlingsplan för klimatanpassning 2020–2030 – och klimat- och sårbarhetsanalys av länsstyrelsens verksamheter [Internal material].

Personal communication.

- Sofia Larsson, sustainability developer, Kramfors municipality, email correspondence March-April 2021.
- Stina Reinhammar, planning architect, Timrå municipality, Interview 2021-04-21.
- Viveka Sjödin, climate change adaptation coordinator, County Administrative Board of Västernorrland, interview 2021-03-17.

Acknowledgements

To begin with, I want to thank my supervisor Örjan Bartholdson for the excellent feedback that you provided throughout this process. You gave me new insight on how to frame my research problem and highlighted ways in which I could develop my research, thank you. I also want to thank all the participants of the study for the time and efforts you put into this project, without you this thesis would not have been possible.

I now approach the end of a chapter of my life that have been centred around university studies. I want to take this moment to thank all the people I have met during both my bachelor studies at Uppsala University and during the last two years of master studies at the Swedish University of Agricultural Science. The discussions, interactions, shared experiences and most importantly, the new friendships made are invaluable to me. I now approach the next chapter of my life with the knowledge that the world is full of people with the skills and dedication necessary to overcome challenges and contribute to a more inclusive, sustainable future.

Thank you.

Appendix 1.

Interview Guide CAB

The interview conducted with the County administrative board of Västernorrland. The interviews have been conducted in Swedish with the help of the following interview guide:

- Hur ser processen ut när den regionala handlingsplanen skapats, vad är det som avgör hur den utformas?
- Vilka aktörer är en del utav processen?
- Hur säkerställs det att de regionala och lokala klimatanpassningsplanen "stämmer överens med" riksdagsbeslut, EU lagstiftning och Agenda 2030?
- Är det tydligt vem som bär ansvaret för de olika delar utav klimatanpassningsarbetet i länet?
- Hur problematiseras klimatanpassning i länet? (Hur bedöms risker och möjligheter från klimatförändring?)
- Vad är det som bestämmer hur olika problem/aspekter i anpassningsarbetet prioriteras?
- Vilket spelrum har länsstyrelsen i att utforma sin regionala handlingsplan

Fördjupande frågor (med följdfrågor) direkt kopplade till innehållet i Västernorrland action plan (om inte de mer öppna frågor jag redan skickat generar svar på dessa punkter).

- I den regionala handlingsplanen nämns det att internationella och nationella mål/ klimatanpassnings åtgärder inte benämns i länsstyrelsens plan. Men då en del utav syftet med länsstyrelsen klimatanpassningsarbete är att tillämpa dessa nationella/internationella mål på regional nivå i Västernorrland, hur har ni tagit detta i åtanke tagits i utformningen av Västernorrlands åtgärder?

- Det nämns att ett nätverk för klimatanpassningsfrågor bildades 2015 med exempelvis länsstyrelsen, länets kommuner, LRF Västernorrland och Skogstyrelsen. Är detta nätverk fortfarande aktivt?
 - o (Om så) Har du varit en del av detta?Beskriv hur?

Vad är syftet med nätverket? (vad bidrar det med, hur fungerar det)?

- o Hur har det har påverkat samarbetet i länet kring klimatanpassningsfrågan?
- o (Om inte) varför lades det ned?

- Länet har varit, är och kommer fortsätta att vara sårbart mot översvämningar i en allt högre utsträckning som en följd utav klimatförändringar. I planen nämns kunskapsspridning som den insats som länsstyrelsen gör för att minska riskerna för översvämning och öka robustheten mot dem.

- o Hur arbetar ni med att ...?

Vilka åtgärder vidtar ni förutom de som beskrivs i handlingsplanen för att höja kunskapen inom ämnet?

Har ni planerat ytterligare åtgärder för att öka samverkan?

- Något som genomsyrar hela handlingsplanen är hur viktigt samarbete är i de olika sektionerna och att mer aktiva dialoger mellan aktörer bör upprättas?

- o Har detta gjorts?

Hur har ni gjort det? Beskriv.

På vilket sätt fungerar nätverket för klimatanpassning som en plattform för detta?

I handlingsplanen står det ”samverkan mellan närliggande län bör ökas”. Har samverkan mellan län har ökat sedan 2018

- Slutligen så har jag en fundering på länsstyrelsens interna referensgrupp för klimatanpassning som står beskrivet i handlingsplanen.

- o Hur arbetar gruppen?

o (Beroende på svar) Finns det någon där som du tror det skulle vara intressant för mig att komma i kontakt med och som själva skulle vara intresserade av att bli intervjuade.

Appendix 2.

Interview guide for the interview conducted with the Timrå municipality representative. The interview and correspondence were done in Swedish and because of it the guide was written in Swedish.

På vilket sätt arbetar specifikt du och mer generellt i er kommun, med klimatanpassning?

- Hur går planarbetet till?
- Vilka faktorer är det som påverkar besluten som fattas? (Vad prioriteras, osv)
- Kan kommunens risk- och sårbarhetsanalyser användas i klimatanpassningen?
- Är det tydligt i vilken utsträckning som kommunerna ska arbeta med klimatanpassning?
- Inom översiktsplaneringen finns sedan 2018 lagstadgade krav på att kommunerna ska bedöma risken för skador på den byggda miljön, kopplade till klimatförändringarna.

Hur ser samarbetet ut i klimatanpassningsarbetet, jag tänker exempelvis på kommuner och landsting.

- Länsstyrelsen har startat upp ett nätverk för klimatanpassningsfrågor, har du varit delaktig i detta nätverk?
- Isåfall, hur har det fungerat?
- Finns det något samarbete med privata aktörer?
- Hur upplever du att stödet från länsstyrelserna som ska vägleda kommunerna i deras klimatanpassningsarbete fungerar?