Stories of sustainable Baltic herring governance

An analysis of the Swedish herring debate

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Abstract

For many years, the ocean has been neglected as an environmental issue. The opportunities for seafood are plenty, both as sustainable diets and climate smart food production compared to land-based production. The challenges of seafood productions differ depending on where the production takes place. In the past few years, Sweden has gained interest in increasing the direct consumption of Baltic herring. At the same time there has been a debate in the Swedish media, of the dire conditions of the fish stock. This study examines the arguments and proposed solutions from different stakeholders on how to manage the resource. Additionally, connecting local discourse to global meta-discourses of environmental governance helps explain stakeholder perspectives on Baltic herring management.

Discourse analysis is a useful tool as it allows a critical analysis of the power relationships between dominant narratives and conflicting knowledge claims. In this thesis, I use a discourse analytic framework to critically analyse the debate that has emerged around the Baltic herring utilization. To further deepen the analysis, I applied the three global meta discourses of environmental governance that Bäckstrand (2006) identified: ecological modernisation, green governmentality and civic environmentalism. The herring debate provides multiple conflicting discourses that are representing a microcosm of the global environmental discourses. The focus in the thesis lies on the discourses of governance surrounding the new food security initiative, from the Swedish government, as well as the narratives that are employed by the stakeholders when discussing herring as food security.

This thesis highlights the importance of acknowledging the power-knowledge relationship between different truths, and that different views of nature will lead to different solutions on how a resource is managed. The result of this thesis shows that the three meta discourses of environmental resource governance help explain why certain actors propose and argue for certain solutions. In addition, it is shown that natural resource governance solutions and benefits need to be critically analysed, and the ecological trade-offs need to be further investigated, before the human and social benefits can become a reality. It is argued that the neoliberal focus that is shaping how the herring is discussed and managed is marginalizing other knowledge, such as the concerns of small-scale producers and concerns about environmental degradation. The neoliberal focus leads to a belief that ecological consideration and exploitation of the Baltic herring can create a win-win situation for everyone involved. To minimize the marginalisation of knowledges and perspectives, this thesis advocates more attention to other solutions than those based on the market and economic profit, where nature values are disregarded.

Keywords: Discourse analysis, herring, critical, power, knowledge, environmental discourse

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Abbreviations

Abbreviation	Description
CFP	Common fisheries policy
ADA	Argumentative discourse analysis
MSY	Maximum sustainable yield
ICES	International Council for the Exploration of the Sea

1. Introduction

Fish is an excellent source of protein, rich in healthy fatty acids and vitamins and there is currently a growing demand for fish in the EU (Pihlajamäki et al. 2018). One underutilized resource, for human consumption, is the Baltic herring. Market forces determine how fish as a resource are allocated either to industrial uses or human consumption (Pihlajamäki et al. 2019). Despite repeated UN calls to prioritize fish for direct human consumption (Pihlajamäki et al. 2018), the EU's Common Fisheries Policy (CFP), which governs Sweden, primarily promotes food security through aquaculture (Regulation (EU) No 1379/2013 2013). This approach overlooks small pelagic species, like Baltic herring, as a potential source of food security. The lack of regulatory interest in governing the catch suggests that reducing fish into feed may remain largely unregulated unless action is taken (Pihlajamäki et al. 2018). The lack of strong governance interest in fisheries is rooted in the sector's traditional reliance on market mechanisms, where the primary goal has been to maximize economic growth. Although there are top-down governance tools such as food safety regulations, fishing quotas, and sustainability certifications, fisheries ultimately operate as a business. Therefore, governance control is difficult to enforce, as market dynamics are complex and largely beyond the full understanding or control of fisheries governance systems (Pihlajamäki et al. 2018).

In 2022, the Swedish government tasked the Swedish Food Agency and the Swedish Board of Agriculture with investigating different ways to increase direct consumption of herring in Sweden. This initiative was also motivated by the ambition to strengthen food security and resilience in response to recent wars, conflicts and pandemics. The goal was to explore how Sweden could increase the volume of herring landed, processed and consumed domestically (Regeringskansliet 2023). Currently, most Baltic herring is shipped to Denmark, where it is converted into fish meal and oil for industrial use (Hornborg 2023).

Similarly, public concerns about the health risks of consuming Baltic herring have contributed to low direct intake, with these risks highlighted in dietary advice from the Swedish Food Agency (Swedish Food Agency 2024). Meanwhile, media debates have criticized the low direct consumption and the fact that only a few companies profit notably from the industry (SVT Nyheter 2021; Bergqvist 2023; Dagens Nyheter 2023). At the same time, coastal fisheries report declining catches and attribute this partly to large-scale commercial fishing (Sportfiskarna 2023). The same year that the government encouraged increased herring consumption, the WWF Red List flagged Baltic herring as critically endangered, arguing that stocks in the Baltic Sea had reached alarmingly low levels (SVT Nyheter 2024).

Environmental discourse is filled with contradictions, different stakeholders present competing claims and concerns about how to address the ongoing crises. These claims are rooted in diverging perceptions of nature and sustainability, two concepts that are highly contested (Dryzek 2013). Environmental policies are shaped within these contradictions, making it crucial to analyse how problems are framed and what political consequences arise from these definitions (Hajer 1995). Additionally, local governance is influenced by global environmental discourses (Bäckstrand & Lövbrand 2006). Understanding how stakeholders perceive sustainability, how their views align with global environmental discourses, and how they formulate solutions for managing Baltic herring is therefore critical to informing future governance strategies.

This thesis will provide a critical debate on the sustainable management of herring, and the trade-offs and interpretation problems that can arise. I will be connecting the case of herring to a wider set of knowledge and general social phenomena and identify similarities and differences in the environmental discourses. In doing so, I can contribute to the existing literature on environmental discourses and provide another perspective by relating micro discourses of herring utilization to the global meta environmental discourses. Focusing on the Baltic herring value chain, this thesis aims to uncover the power dynamics and knowledge claims, shaping governance and sustainability practices.

1.1 Aim and research questions

This thesis aims to investigate the dominant narratives embedded in power structures and conflicting knowledge claims that shape how stakeholders manage the Baltic herring, enhancing our understanding of the complex issues surrounding the sustainable management of herring. To answer this, the following research questions are formulated:

1. What are the different perceptions from stakeholders on Baltic Sea herring governance?
2. How are different storylines from diverse stakeholders being told and why?

1.1.1 Limitations

This study has several limitations that should be acknowledged. The first limitation is the focus on how stakeholders perceive the Baltic herring value chain and the possibilities for improving its sustainability. The scope is restricted to the Swedish context, given Sweden's extensive Baltic Sea coastline, significant herring catches and low domestic consumption. The analysis is further narrowed to the arguments presented by stakeholders within the fishing industry, scientists and environmental

organisations. The study does not include a policy analysis of international agreements or national strategies.

Another key limitation is the number of respondents. Due to time constraints, it was not possible to engage a larger and more diverse group of interviewees. Additional material, such as news articles and policy documents, has been used to balance the limited number of interviews. Therefore, it is vital to acknowledge that the study only portrays part of the debate surrounding herring in the Baltic Sea.

Considering the importance of generalisation, a larger sample size is typically preferred, as it reduces skewness. Additionally, due to time and resource limitations a larger selection was not possible. Another reason for the limited number of respondents is the homogeneity of the studied group. All participants are connected to the herring industry in some way, yet they draw different conclusions about what actions should be taken. For that reason, I cannot generalise about all stakeholders in the fisheries sector after only studying a few of the stakeholders (Dannefjord 1999). The intent of the thesis is not to answer questions about human nature in similar situations, but to test if the theory functions and show a way and a situation where it can be used. The focus for this study is therefore to bring out new perspectives and answers on resource governance and then suggest advice for future reasoning (Dannefjord 1999).

Lastly, due to the time constraints, it would have been valuable for the study to spend more time on a variety of fishing vessels both small and large to gain first-hand experience and broader perspectives. Lastly, it would have been valuable to include insights from a political policymaker.

1.1.2 Definition of study terms

Small-scale fishing

When referring to small-scale or coastal fishermen in this thesis, the criteria provided by the Swedish Agency for Marine and Water Management (2010) is applied. The definition of small-scale fisheries is not fixed in Sweden but these criteria are therefore treated as guidelines (Swedish Agency for Marine and Water Management 2010). Small-scale fisheries are characterized by a ship size under 12 meters, the tools are required to be passive, regionally bound and the fishing trips should not exceed one day. Further, the fishing should be conducted within 12 nautical miles of the coast and next to the rural areas of Sweden (Swedish Agency for Marine and Water Management 2010).

Pelagic fishing

In this thesis, pelagic fishing refers to industrial fisheries or large-scale fisheries. Pelagic fishing differs from small-scale fisheries in the sense that they primarily target pelagic species (herring, sprat and mackerel) that live in the open sea. A certain permit is required when using methods of trawling or other tools in 45 meters depth or deeper and with a circumference over 360 meters (Swedish Agency for Marine and Water Management 2023). The catch is mostly for forage and landings are in Sweden and Denmark, with a small number of by-catch that go to human consumption.

2. Background

This chapter provides a brief introduction to herring governance, followed by an overview of herring policy in Sweden. These policies are situated within the broader framework of the EU's fishery policies and the overarching themes of sustainability, governance and food security. Additionally, the chapter includes an introduction to Sweden's herring fishery.

2.1 The Evolution of Fisheries Policy in Sweden

To explain the current debate and view of the ocean's resources, this section will cover the perception of the ocean in Sweden, and how that could enlighten the perceptions of today. Historically, both fisheries and agricultural policies have been implemented to ensure food security, particularly during crises such as wars. This focus contributed to prioritizing domestic production (Ask et al. 2015). Until the end of 1980s, there was a belief that the ocean was separate from society, an infinite, timeless expanse with limitless resources and an innate absorptive capacity (Hentati-Sundberg 2017; Cederqvist et al. 2020). Consequently, practices such as sewage disposal, oil dumping and waste dumping directly into the Baltic Sea went largely unquestioned. This perception also pushed some species, such as the European eel (Anguilla Anguilla), to the brink of extinction (Cederqvist et al. 2020).

Viewing the ocean as inexhaustible and separate from human society also led to an anthropocentric focus in historical maritime records. Trade routes were well documented, while the living organisms of the marine environment were ignored (Cederqvist et al. 2020). This perspective shaped priorities during the 1950s when the industrialization of fisheries began to accelerate. During that period, the primary focus was on optimizing fisheries to maximize catches, which resulted in industry subsidies and the introduction of stricter regulations, in contrast to the unregulated practices of the early 19th century (Hentati-Sundberg 2017). From 1950, mercantilism guided fisheries policies, with the goal of creating a competitive domestic fishing fleet capable of supplying the Swedish population with fish. Imports were believed to be a threat to the Swedish fishing industry. Subsidies for fuel, modernization loans and other forms of state support were aligned with this mercantilist perspective (Ask et al. 2015). Environmental arguments further supported the push for domestic production, as local food was thought to be better than imported alternatives (Ask et al. 2015).

Until the late 1970s, modern industrial fisheries, particularly forage fishing in the Baltic Sea, were almost non-existent as most catches came from the North Atlantic

(Eggert & Langlet 2020). This changed when Iceland extended its exclusive economic zone (EEZ) to two hundred nautical miles, restricting access to foreign fishing vessels. Similarly, the European Community (now the European Union) prohibited targeted forage fishing in its EEZ. As a result, Swedish West Coast fishermen turned to the Baltic for fishing (Eggert & Langlet 2020).

The next major restructuring would take place in 2009 with the introduction of Individually Transferable Quotas (ITQ). This system aimed to modernize the fleet, reduce overfishing and improve economic efficiency (SFS 2009:866). According to the Swedish government, the ITQ system was a tool for creating a thriving seafood sector in line with economic, social and ecological sustainability (SFS (2009:866). The quotas were given to active fishermen based on historical catches. Initially implemented as a 10-year trial, the ITQ system was extended for an additional 10 years in 2019 (Eggert & Langlet 2020). Although the ITQ system successfully reduced the number of fishing vessels, it fell short in reducing overfishing (BalticWaters 2024). Critics have highlighted that while the system improved economic efficiency for some, it contributed to further centralization of fishing rights, disproportionately benefiting larger vessels. Small-scale fisheries were marginalized, leading to a less equitable distribution of resources within the industry (Stage et al. 2016a). The challenges faced in the ITQ system underline the complexities of balancing ecological sustainability, economic viability and social equity in fisheries management (Stage et al. 2016b). As a concluding note, this highlights that Sweden's ocean policies have historically been shaped by economic and social priorities, often at the expense of ecological considerations.

2.2 The culture and history of the Swedish herring

Throughout the Swedish history, herring has been an important and reliable source of nutrition. deoxyribonucleic acid evidence shows that Danish herring were being traded in Poland as early as the 9th century. By the 12th century, herring had become a significant trade commodity throughout the Baltic Sea region. This also meant that herring was heavily impacted by fishing pressure, with studies indicating overexploitation as early as the 13th century (Atmore et al. 2022). In the late 18th century, the Swedish West Coast experienced a herring boom. The Bohuslän region alone boasted 338 herring salteries and 400 distilleries. However, this intense activity once again depleted the herring stocks, and it was not until the 1870s that large-scale herring fishing resumed (Balticwaters 2023). It was consumed fresh, grilled, dried, boiled, smoked or pickled (what would later be called fermented herring) (Balticwaters 2023).

For a long time, herring was an everyday food, but in the 15th century it was introduced to more festive preparations, such as spiced herring with dry spice blends. It was not before the 18th century, that herring became part of the fine dining brandy table. It was then pickled with vinegar, sugar and Southeast Indian spices, and this preparation earned herring a place in the formal meals of the era. The formal meals at that time were buffet-style meals (brandy tables). Initially, only the upper classes could afford the spices, sugar and vinegar required for fine herring pickling. This availability would change with the introduction of inexpensive beet sugar and advances in the tin-canning industry during the 19th century, making it accessible to a broader audience. Over time, it evolved into a festive dish for traditional Swedish holidays such as Christmas, Easter, and Midsummer (Balticwaters 2023).

Despite its historical and cultural significance, as well as its crucial role in the Baltic Sea's ecosystem, there is limited knowledge about the occurrence and migration patterns of Baltic herring stocks (Ask et al. 2015). This lack of understanding makes it difficult to determine the sustainable levels of fishing pressure. Recognizing these uncertainties argues for a precautionary approach to protect and recover herring stocks in the Baltic Sea, urging for actions to prevent further depletion rather than continuing current practices (SLU 2024b).

2.3 Food security and the Baltic herring

The Baltic herring is primarily used for industrial purposes, with 95% of the total catch shipped to Denmark to be processed into fish meal and oil (BalticWaters 2024). Considering global challenges such as wars, conflicts and pandemics, the Swedish government tasked the Board of Agriculture in 2022 with investigating ways to creating a more resilient value chain for herring (The Swedish Board of Agriculture 2023). Objectives included increasing the number of herring landed and processed in Sweden and promoting greater domestic consumption (The Swedish Board of Agriculture 2023). This initiative represents a prominent shift, as blue value chains have not historically been included in Sweden’s national food strategy (Regeringskansliet 2023).

The challenges to increasing domestic herring production are significant. Key barriers include inadequate preparation facilities, geographic constraints, pricing issues and limited port infrastructure, such as insufficient depth and size (The Swedish Board of Agriculture 2023). Additionally, market demand for herring remains low compared to other fish species, and high levels of dioxins in fatty fish, including herring, raise public health concerns (Hornborg 2023). Larger fish are particularly affected, as they absorb more dioxins over time. Public awareness about the health benefits versus risks of consuming Baltic herring is also limited,

further discouraging domestic demand. Addressing these barriers would not only strengthen food security but also contribute to a more sustainable seafood value chain, reducing Sweden's reliance on imports and fostering resilience in times of crisis (Pihlajamäki et al. 2019). Despite the profitability of the pelagic fishing sector (Hornborg 2023), the Swedish processing industry struggles with insufficient access to herring and, in some cases, must import fish to meet demand, due to lack of large herring that is needed to make dishes such as the fermented herring (SVT Nyheter 2022).

2.4 The Role of EU Fisheries Governance

Sweden's fisheries governance and management are regulated under the EU Common Fisheries Policy (CFP) (Swedish Agency for Marine and Water Management 2024b). It is one of the few politic sectors where the member countries cannot make their own decision regarding their resources. The current CFP that was introduced in 2013, and aims to ensure that EU fisheries remain sustainable both today and in the future (European Commission 2025). It emphasizes the contribution of both fishing and aquaculture to economic, social and environmental objectives. The central tool of governance of the CFP is Maximum Sustainable Yield (MSY), which refers to the highest number of fish that can be harvested from a stock without compromising its ability to reproduce (SLU 2024a). Achieving MSY requires restoring and maintaining fish stocks above sustainable levels (European Commission 2025). The sustainable level is determined by biomass reports from commercial fisheries, compiled by the International Council for the Exploration of the Sea (ICES). This serves as the basis for the assessments. ICES provides recommendations to the EU Council of Ministers, which ultimately decides on fishing quotas (SLU 2024b). The annual fishing quotas are decided by the EU Council. The Swedish Minister for Rural Affairs represents Sweden's interests during these negotiations (SLU 2024b). While the 2013 reform of the CFP introduced MSY and an ecosystem-based approach to fisheries governance, implementation has been slow. The ecosystem approach, which considers the effects of fishing on other species and the broader environment, often conflicts with the MSY's single species focus. Short-term economic interests have thus continued to dominate EU fisheries policy (Eggert & Langlet 2020).

This thesis recognises the urgency to explore herring governance in Baltic Sea, since Sweden's government is required to respond to EU's speculative decision on how to manage herring in the Baltic Sea. In October 2024, the EU's fisheries ministers reached an agreement on herring MSY in the Baltic Sea, resulting in a 108% increase in fishing opportunities for central Baltic herring. This decision aligned with ICES recommendations (Council of the EU, 2024). However, just a year earlier, the European Commission had called for a halt to targeted herring

fishing due to the species' critical condition. The possibilities for Sweden to influence these decisions are limited, as quotas are determined collectively by EU ministers (European commission 2023).

The line between Sweden's and EU fisheries governance is thin as the Swedish fisheries policy is highly regulated by EUs CFP. However, there are some exceptions where Sweden have deciding powers over its own fisheries resources. One is the ability to determine how the system of Individually Transferable Quotas (ITQ) is implemented. Although when implementing ITQ, the member states are expected to adhere to the following: *"Member States shall endeavour to provide incentives to fishing vessels deploying selective fishing gear or using fishing techniques with reduced environmental impact, such as reduced energy consumption or habitat damage"* (Regulation (EU) No 1380/2013, art 17).

The other exception is that Sweden has the authority to independently manage resources within its 3-12 nautical mile zone. However, this exception does not extend to prohibit vessels from neighbouring countries, such as Finland, which have traditional fishing rights in the Baltic Sea. Consequently, discussions surrounding a trawling prohibition face significant limitations. For example, a ban on trawling for pelagic species in the Central Baltic Sea cannot be implemented unless Finland also agrees to such a measure for its fishing vessels within the 12 nautical miles (Swedish Agency for Marine and Water Management 2024).

3. Theoretical framework

This chapter includes a presentation of concepts and theories that I use to draw understandings from the findings. The theoretical framework I will be using is environmental discourse to analyse a multi-stakeholder approach. The assumption of this thesis is that herring governance debates represent a microcosm of competing and overlapping discourses that constitute the debates of global environmental governance. The concept of power-knowledge is applied. In the case of the Baltic herring, the stakeholders are positioned differently in the debate on herring governance. Discourse analysis is therefore enhanced by connecting it to the global environmental discourses. In this thesis, I apply three meta discourse categorisations, inspired by Bäckstrand & Lövbrand (2006): ecological modernization, green governmentality and civic environmentalism.

3.1 Environmental discourse/previous research

Since the mid-1990s, discourse analysis has become a well-established method in the study of environmental policy. Over time, it has developed a range of conceptual approaches, methods, topics and geographic applications. Environmental discourse analysis includes a wide range of topics, such as pollution, climate change and nature conservation (Leipold et al. 2019).

There are multiple ways of conceptualizing and discussing nature and the environment (Feindt & Oels 2005). Therefore, terms such as "nature, "wilderness" or "sustainability" are socially constructed and shaped by cultural traditions and social values. Discourse analysis examines how these concepts are created and maintained through societal communication, highlighting that they are not fixed entities but dynamic constructs. These constructs arise from cultural traditions and processes of social negotiation, where meanings are constantly contested and redefined (Steffek, 2009). Though these terms are socially created, it does not make them unreal, and this can lead to disputes over definitions when stakeholders with different interpretations of “nature” try to manage an environmental resource. In addition, different conceptions of nature can become an issue and constitute political disputes. To be able to formulate solutions to environmental problems, nature must be comprehensible or linguistically intelligible (Dryzek 2013). Hajer (1995:44) writes that *“to understand why a particular understanding of the environmental problem at some point gains dominance and is seen as authoritative, while other understandings are discredited”.* When a reality is understood in the same way by a majority, it represents a “discursive hegemony”. This hegemony can be challenged via “language in use” or so-called discursive interaction which gives

opportunities for new perspectives and conceptualizations that can be adopted by actors (Hajer 1995:59/60).

Multiple definitions of ¨nature" and what is considered "sustainability" introduces alternative narratives. For instance, "green growth" narratives have been criticised for justifying activities that are not in line with sustainability objectives (Voyer et al. 2018). Green growth narratives can contribute to the commodification, privatisation and neo-liberalisation of nature (Castree 2010). At its heart, neoliberalism seeks to reshape human relationships with nature, transforming it into a commodified entity, accessible only to those with adequate financial resources (Castree, 2010). Similarly, concepts like "sustainable development" are continually in a struggle over meaning, interpretation and implementation (Hajer & Versteeg, 2005). A good example of this is Epstein's (2005) study on anti-whaling activism, where activists' narratives have become a dominant narrative and shaped public and political attitudes toward whaling in the case of knowledge and power in global environmental activism.

This thesis seeks to identify how these discursive processes of what is considered nature and sustainability affect and shape current debates of Baltic Sea herring governance. Three dominant discourses that have been identified in other studies such as (Bäckstrand & Lövbrand 2006), in which the authors are investigating the global environmental discourses. These discourses need to be in conversation to analyse how they shape modern governance strategies and suggestions. In the next section these discourses will be explained.

3.1.1 Ecological modernisation

The first discourse that is prevalent in the global discourses on environmental governance is ecological modernization. This discourse gained ground in the western societies with the Brundtland report "Our common future" in the 1980s. In contrast to previous thinking that there are "limits to growth" that was suggested in 1972 by the Club of Rome, this perspective often suggests that industries can transition to sustainable practices without significant disruptions to economic structures. Ecological modernisation, or ecomodernism, is based on the belief that environmental challenges can be addressed within the framework of existing societal arrangements, such as green growth and sustainable development. It argues that economic growth and environmental protection are not mutually exclusive but can coexist, thereby rejecting the need for radical systemic changes to address environmental crisis (Hajer 1993).

Dryzek (2013) further explains that ecological modernization encourages businesses to adopt resource management practices, emphasizing that the destruction of natural resources is ultimately more costly than their preservation. This discourse, however, has been criticised for its disregard of social justice, favouring flexible and cost-effective solutions to environmental problems over more equitable approaches. Its central principle often summarised as "pollution prevention pays", reflects a market-driven logic that prioritises economic incentive (Berger et al. 2001). Ecological modernisation has been described as an advanced form of liberal governmentality, highlighting collaboration and co-benefits between economic growth, development and climate protection (Bäckstrand & Lövbrand 2006). This thesis argues that dominant societal discourses, such as industrial growth and government-driven economic expansion, shape environmental debates and therefore influence how problems are interpreted, framed, and addressed (Dryzek 2013).

3.1.2 Green governmentality

In addition to the ecological modernization discourse, the discourse of green governmentality also plays a significant role in today's industrialized societies. The concept of governmentality originates from Michel Foucault, who described it as the "art of government", encompassing techniques and rationalities used to shape human behaviour through authorities, agencies, and instrumental rationality (Foucault 1978; Luke 1995). This approach operates by influencing individual lifestyles, aspirations and choices, extending power over and through individuals and groups (Bäckstrand & Lövbrand 2006).

Timothy W. Luke further developed the concept of governmentality, applying it to environmental governance (Luke 1995). Green governmentality strategies are deeply embedded in the discourses of sustainable development and ecological modernization. According to Bäckstrand and Lövbrand (2006), environmental threats have driven the emergence of a new "eco-knowledge," expanding governmental control to encompass planetary-scale management. This green governmentality relies on rational, scientific approaches to managing natural resources and human-nature relations, rooted in the relationship between power and knowledge (Barker 1998; Luke 1999).

The logic of green governmentality asserts that a sustainable future only can be achieved through the measurement, control and regulation of natural resources and human interactions with nature. Eco-knowledge, in this context, legitimizes technocratic understanding of the human-nature relationship. At the same time, it often marginalizes alternative forms of knowledge about natural resource governance (Moran & Rau 2014). Nature, within this framework, is treated as a

controllable infrastructure, subject to state management and large-scale sociotechnical interventions. It is seen as something to be dominated, shaped and terraformed through centralized governance (Fogel 2005). Science and innovative technology are vital components of the green governmentality discourse, forming the backbone of its political and environmental strategies. However, this technocratic worldview excludes other perspectives, leading to what (Fogel 2005) labels the "global gaze." This perspective fosters a detached and utilitarian view of nature, legitimizing top-down policies of green governmentality but disconnecting society from the ecosystems it seeks to manage (Bäckstrand & Lövbrand 2006).

3.1.3 Radical civic environmentalism

The discourse of civic environmentalism started to emerge following the 1992 United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro. The conference introduced a global environmental agenda that emphasized participation and "stakeholding." After Rio, the "bottom-up" approach to environmental problem-solving became a central theme in both policy and debate. The underlying motive was ensuring that individuals directly affected by environmental challenges, or those with legitimate stakes or interests, should have a voice in defining solutions (Bäckstrand & Lövbrand 2006). Striving for sustainable development, the inclusion of marginalized groups, such as women, youth and indigenous peoples, became a focal point. However, this emphasis on participation has also highlighted a "participation gap" as these groups remain underrepresented. The increased involvement of non-state actors, including businesses and NGOs, has contributed to complex, multicentric governance structures and "glocal" arrangements. Despite these developments, the principle of state sovereignty and legal frameworks remains the ultimate judge in international negotiations (Bäckstrand & Lövbrand 2006). The Rio Conference established civil society forums as a template for future summits on environmental and development issues (John 1994). Civic environmentalism represents a set of normative attitudes toward environmental politics, promoting a bottom-up approach to policy making This discourse not only highlights the practical benefits of participation in solving environmental problems, but also its democratic value (John 1994).

Radical civic environmentalism adopts a critical stance, questioning the effectiveness and sincerity of participatory approaches. Rooted in a neo-Gramscian perspective, this discourse argues that power imbalances within institutions and negotiation processes undermine genuine participation. Radical civic environmentalists advocate for a deeper transformation of global markets and institutions, challenging current consumption patterns and structural inequalities (Paterson, 2000; Bäckstrand & Lövbrand, 2006).

This perspective views multilateral financial institutions and UN agencies as biased toward neoliberal policies that prioritize market-oriented approaches, privatization and deregulation at the expense of environmental protection. It identifies capitalism, patriarchy and state sovereignty as interconnected threats to resolving the environmental crisis. Radicals argue that retreating to the state through partnerships and participation obscures the underlying power dynamics and domination in global environmental politics. Social movements, they contend, should focus on exposing and challenging these power structures (Kütting, 2000; Lipschutz, 2003).

As a finishing note, the three meta-discourses discussed in this chapter share some overlaps but also significant divergences. Green governmentality and ecological modernization rely on technocratic and expert-driven approaches to address environmental crises, emphasizing management and control (Bäckstrand & Lövbrand, 2006). In contrast, civic environmentalism criticises these top-down approaches, expressing scepticism about win-win scenarios that perpetuate technocratic solutions. It emphasizes the trade-offs inherent in balancing ecological, economic and social sustainability, challenging the notion that all three goals can be achieved simultaneously without compromise (Bäckstrand & Lövbrand, 2006).

I argue that these discourses will bring a deeper level of analysis and further unpack the stands of stakeholders toward the governing of the Baltic herring.

4. Methodology

In this section the methodology of this thesis is presented. The empirical analysis is inspired by Maarten's A Hajers argumentative discourse analysis and concepts along with (Bäckstrand & Lövbrand 2006). The chapter is concluded with the operational strategies of discourse analysis that are used in the thesis.

4.1 Operationalising

For the operationalising of this thesis, thematic coding was applied in line with Creswell & Creswell (2017). Coding the empirical data into themes will provide a structure for the analysis. As I knew beforehand that I wanted to explore the themes "sustainability" and "food security", I employed what (Creswell & Creswell 2017) names "predetermined codes". This is why these themes have guided the development of the codes. Consequently the codebook was developed before coding the data, but to not get stuck in "finding" specific empirical data I let the codebook develop and change during the analysis as more information was added (Creswell & Creswell 2017).

In addition to the main themes, I sorted the empirical material into three identified storylines, which I name the pragmatic, reformist and equity storylines, and added subcategories of "problem definition" and "solution" to increasing herring direct food consumption and increasing the sustainability of the fish stock. During the interviews the respondents talked about solutions and problems in improving the herring value chain, three different thematical discussions arose. Due to the diverse stakeholders that were interviewed I separated the three themes according to (Harboe & Larson 2013). The first storyline focused on the business side of herring fishing, which I therefore named the pragmatic. The second storyline had an extended interest in the transformation of the whole fisheries business towards a more environmental focused governance, which I therefore named the Reformist. The last storyline was named Equity as it addresses more focus on livelihood and small-scale fishers.

4.2 Materials and sampling

4.2.1 Interviews

This thesis bases partly on eight semi-structured interviews of stakeholders with different agendas and backgrounds. All the interviews were recorded and transcribed. Before recording, I asked for permission and informed the respondent how the information would be handled either by sending out an information paper

about the study or asking for permission when meeting. All the respondents agreed to being recorded under pseudonym. The interviews were semi-structured, and guided interview questions had been prepared beforehand, but as the interview went along, I let the respondents mildly direct the conversation to get their experiences and views. This study is interpretative which is why, both from ethical reasons and to increase the data reliability, a semi-structured interview guide is a good method (Harboe & Larson 2013). The interviews were recorded and transcribed. Kvale & Brinkmann (2014) writes that by transferring a conversation to a text, the interview is hollowed out. Additionally, some context and nuances may be lost, which could lead to respondents feeling misrepresented or stigmatized.

The core of the thesis aims to analyse how stakeholders perceive different problems, solutions and opportunities. The stakeholders were identified through secondary data such as news articles and policy documents. Later these were chosen based on a snowball effect as the respondents recommended other participants. The response from the selection also plays a significant part in how the empirical data should be read, as many did not respond to my requests. One such key stakeholder was the Swedish Board of Agriculture.

Below are descriptions of the respondents:

1. WWF respondent: Has a Master of Science in marine biology, and a long history of working in fisheries governance and contributed to the development of the WWF Fisheries Guide.
2. Small-scale entrepreneur: Works with blue food and runs a fisheries tourism business on the side and is interested in local and diverse food. Also possesses extensive experience and knowledge of working with seafood and governance.
3. Researcher in Marine Ecology, Stockholm University: Has worked in fisheries governance for over 30 years and is interested in the historical development of fish stocks over time.
4. Marine project manager: Works with local fisheries governance, focusing on herring. Involved in all stages of the fish value chain, from fishing and processing to marketing.
5. County administrative board, Stockholm: Experienced in ocean environments and fisheries politics and is currently engaged in a project on ecosystem-based governance in the Stockholm archipelago.
6. Researcher on seafood, Gothenburg: A marine biologist working on sustainable seafood chains. Focuses on species such as herring and aquatic salmon.

7. Small-scale fisher, Baltic Sea coast: Has been fishing herring since the 1970s and has previously operated a larger boat but now uses only passive fishing tools. Processes the catch on a smaller scale.
8. Fishing entrepreneur in a larger fisheries business: Has a research background in marine biology.

4.2.2 Other sources

Supplementary to the empiric material are documents and blog posts from the Sweden Board of Agriculture, as well as the recent strategies of how they see the future of herring. All materials are taken from 2023-2024 to get the most recent and relevant material and because the proposal to increase herring landing was made in 2022. There were also articles chosen to supplement and backup the material of the interviews and to capture the discourses.

4.3 Positionality

As a researcher, I am influenced by environmental and sustainability discourses, as I hold strong convictions in favour of those discourses. I am aware that it is easy to fall into the trap of "seeking" certain faults by policymakers in written policies to align with my own beliefs. To mitigate this bias, I have developed open research questions that are not overly directed by my personal convictions, ensuring they allow space for a more objective analysis (Creswell & Creswell 2017). While I am personally invested in sustainability, my primary goal is to conduct nuanced and balanced research. I will consistently reflect on my material and interpretations, seeking to understand the different ways the data can be interpreted, and I will explain how and why I arrived at my conclusions. One method I will use to ensure this is by maintaining reflective notes throughout the research process. Additionally, the notes will help guide the development of themes and codes in my thesis (Creswell & Creswell 2017). When identifying different storylines and motivations around herring governance, there is always interpretation being done by me as a researcher. To balance this, it is important to be transparent in how the interpretation of the material have been done, as there is a risk of author subjectivity, and as a human being there exists prejudices (Kvale & Brinkmann 2014).

4.4 Executing discourse analysis

This thesis employs a discourse-analytic framework inspired by Bäckstrand & Lövbrand (2006) to critically analyse the rhetoric surrounding "herring sustainability". A qualitative approach examines how language, within its context, shapes understanding and action (Bergström 2012). Drawing on interpretative

constructionist ontology, this framework rejects the idea of a single reality, instead suggesting the existence of multiple socially constructed realities (Hajer & Versteeg 2005). Employing Bäckstrand & Lövbrand (2006) frameworks, the discourse is constructed upon four dimensions. Firstly, discourse is understood as *"an ensemble of ideas, concepts and categories through which meaning is given to social and physical phenomena, and which is produced and reproduced through an identifiable set of practices*" (Hajer & Versteeg 2005). The debate over herring exemplifies this struggle for meaning as stakeholders advocate for different solutions.

Secondly, the dynamic relationship between power and knowledge in sustaining a specific discourse is explored. Moving beyond traditional hierarchical views of power as "owned" by individuals or institutions, it adopts Foucault's perspective of power as relational and circulating between stakeholders (Barker 1998). Power manifests subtly, for instance, when governments frame perspectives as "natural," often obscuring contradictions (Fairclough 2013). Analysing policies in line with argumentative discourse analysis can illuminate how power and policy can favour certain realities, empower specific actors while marginalizing others (Hajer 1995). As discourses are embedded in power relations, they become knowledge regimes and are based on history and different ways of using knowledge and truth, which decides what is possible to say during specific moments (Bäckstrand & Lövbrand 2006).

Thirdly, policies are not seen as neutral tools but as a product of discursive struggles. Analysing policies in line with argumentative discourse analysis can illuminate how power and policy can favour certain realities, empower specific actors while marginalizing others. This concept is called discourse initialization and it refers to when an institutional phenomenon is created from a specific discourse (Hajer 1993; Bäckstrand & Lövbrand 2006).

Finally, the fourth way that the discourse analysis framework is executed is that subjects are needed in order to reproduce storylines tied to certain discourses; this will henceforth be referred to as discursive agent. There exists a notion of agency. Stakeholders play an important role as they wield power by encouraging a certain frame or discourse onto a discussion, they are actively drawing attention to discourse categories by positioning themselves within them. The discussion of a certain meaning of a policy principle never settles but is under constant political contestation. This highlights how politics is conducted and how different stakeholders position themselves actively within a context (fc. e.g. Dratwa, 2002).

To summarize, employing this discourse analytic framework will reveal how institutions and practises are embedded in discourses. Furthermore, stakeholders play a key role as discursive agents, actively shaping and contesting meanings to influence political processes. This highlights how power, agency and contestation continuously shape policies and societal outcomes.

5. Empirical findings

In this section, I present the findings found from the documents, interviews and research articles. Based on the interviews three different storylines were identified and named the pragmatic, reformist and equity. I provide three summaries of each theme at the beginning of each section, in which I include a core theme, a problem definition, a proposed solution and key stakeholders. In the theme, I refer to how they position themselves in the sustainability debate. The problem definition is how the stakeholders formulate the issues regarding the herring utilization. The proposed solutions are how they suggest that the intake of herring can increase and how they would like to increase the sustainability of the herring. In terms of function, I also include the summary of the key stakeholders that share the view on the theme I described at the beginning of each section.

5.1 Pragmatic: Opportunities of the ocean

The first perspective I identified focuses on maintaining the fisheries business. The key stakeholders that provided this storyline are respondent number 4 (Marine project manager) and 8 (Fishing entrepreneur), and the Swedish Board of Agriculture. Within this theme, the interviewees and secondary materials acknowledge the degradation of the herring and Baltic Sea. However, this perspective highlights social and economic sustainability to a higher degree than the reformist. The perspective indicates that to secure jobs, the economy and food security, the current herring fishery needs to continue. Respondents expressed optimism that shifting herring use toward direct consumption would benefit both fishermen and the ecology of the Baltic herring stocks. This storyline is different from other perspectives that advocate for systemic change. Instead, herring is framed as an underutilised species that has great potential to be a sustainable food resource if managed and harvested sustainably.

5.1.1 Problem: low direct consumption and demand

While some perspectives emphasize the urgent crisis facing Baltic herring and call for major reforms in fisheries governance, this storyline focuses on inefficiencies in the herring value chain and the low levels of direct consumption in Sweden. This perspective, instead of reducing large-scale fisheries to lower fish mortality, like reformists suggest, the pragmatic storyline focuses on improving the use of Baltic herring to achieve more sustainable fisheries.

Therefore, the primary concerns are increasing production and improving efficiency, instead of solely assigning the blame towards industrial fishing practices.

While productions and efficiency are two major points of focus in the pragmatic storyline, the storyline acknowledges the importance of maintaining a sustainable catch rate, but what the definition of a sustainable catch is, differs from the other two storylines. The pragmatic is positive towards measuring sustainable fishing methods, based on the ICES (International Council for the Exploration of the Sea), which provides stock assessments and sets sustainable catch limits. As one respondent stated: "*The herring will not disappear, I'm absolutely convinced of that. I've been involved in ICES stock assessments, so I know a bit about the estimates. It's not going to disappear."* (Respondent 8). The MSY by ICES is perceived as expert knowledge to determine how much pressure the Baltic Herring can take. Stakeholders therefore have removed themselves from the full responsibility on herring extraction, instead using the numbers provided by ICES. This trust has shifted the stakeholders' concern from stock depletion to the ability to utilise the herring. However, this reliance on experts contrasts with the reformist and equity perspectives, which are more critical of the maximum yield governance. If herring stocks are overestimated, excessive fishing could lead to a collapse, making this perspective a risky gamble. The pragmatic viewpoint does not question ICES or the MSY model but instead frames the issue as one of utilization and efficiency in herring fisheries. To increase the efficiency, large-scale pelagic fisheries is seen as the primary way to ensure Sweden's seafood supply. The Swedish Board of Agriculture states:" *Pelagic fishing is a highly regulated sector. The foundation for the long-term survival of fishing and the processing industry is sustainable fish stocks."* (Swedish Board of Agriculture, 2023:23).

This suggests a less critical stance toward industrial fisheries compared to the reformist perspective. The pragmatic approach does not challenge the role of industrial fisheries to secure food security. Instead, it focuses on increasing production and improving efficiency to support large-scale fisheries. Unlike the equity perspective, which emphasizes small-scale production, this view considers large-scale fisheries as essential for supplying food during crises. As one respondent explained: *"If we're going to talk about providing food for larger communities, then we need a fishing industry that produces larger quantities. We*

need local processing on a larger scale, which could also handle the small catches from coastal fishing." (Respondent 4).

While the need for healthy fish stocks is acknowledged, this perspective does not present the issue as an immediate crisis, as reformists do. Instead, the goal is to optimize the existing resource efficiently and strategically. In this context, "efficiency" means ensuring that more herring is used and consumed within Sweden. Therefore, providing food is elevated in the solution, something that one respondent points out: *"We have quite a few members who fish herring, which means we are closely involved with matters related to herring. Additionally, we have the major task of addressing the preparedness issue and increasing the amount of Swedish fish on people's plates, which is a very important aspect of our work. Here, we have production facilities with the capacity to handle herring efficiently."* (Respondent 8). Pelagic species are viewed as an underutilized resource with significant potential beyond fishmeal and fish oil production. However, the lack of large-scale processing facilities and landing ports poses challenges for increasing food security and direct herring consumption. As the Swedish Board of Agriculture notes*: "If Sweden ends up in a situation where the capacity to handle and utilize herring and sprat is needed to a significantly greater extent than today, this will require changes. This could involve increasing the capacity for landing, unloading, and processing herring. Such a change is time-consuming and requires new constructions and new equipment."* (Swedish Board of Agriculture, 2023:69).

Overall, this perspective frames the problem as production, demand and efficiency issues in the herring value chain. The key challenges are inadequate infrastructure for pelagic fishing vessels and a limited number of processing facilities capable of handling large catches.

5.1.2 Solution: change of utilisation and increase demand

Two of the problems identified before herring direct intake can increase, is lack of production and efficiency. Instead of discussing more cultural and environmental aspects like the Equity and Reformist perspectives, the solutions that are proposed are market oriented. Regulation of the catch, utilisation and increasing demand are thus solutions that arise. A key focus of this perspective is maximizing harvest while maintaining ecological thresholds. Increasing Swedish landings is central to this approach: *"It's about ensuring that the landing and reception of pelagic fish work well in Swedish ports. To achieve this, improvements to the infrastructure are needed in most ports with active fish reception."* (Swedish Board of Agriculture, 30/9/24).

Employment and economic considerations are emphasized in the pragmatic perspective. Another key issue is the low domestic demand for herring, which is seen as a missed economic opportunity. Rather than framing herring as a sustainability issue, as reformists do, this perspective treats it as a market issue. One respondent explained*: "Fishers don't need to adapt much—it's just about sorting the catch differently. (...) They will do it if they get better paid for catching it. It's a market issue. No one will fish for consumption if they get paid less for it. Fishers are, after all, business owners."* (Respondent 8). Marketing and consumer knowledge are crucial factors. Concerns about dioxins and public perception are seen as obstacles that need to be solved to increase domestic consumption. As one respondent stated: *"The absolutely biggest issue is marketing. Someone needs to tell people why they should eat herring from the Baltic Sea and that it's not dangerous."* (Respondent 8).

Utilisation incentives

Regulations are seen as critical for controlling and steering larger boats toward fishing more for consumption and by that putting less pressure on the fish stock. One respondent emphasized: *"The processing industry is key to both creating more food from fishing and steering the fishing industry toward more sustainable ecological practices. Through processing and development, you increase the value of the fish you've landed, which helps ensure we have fish in the future. By increasing the value of the landed fish, you don't need to catch such large quantities."* (Respondent 4).

To improve the possibilities for a larger scale food production of herring, there needs to be economic incentives for vessels to fish for consumption. The government should be direct and set the agenda of the pelagic vessels. One respondent, when asked about what the government's part is in securing food security of the herring, replied: *"You need to take a firm stance and show decisively that we must increase food preparedness. You shouldn't focus on minor details; you need to set the agenda for companies based on tradition. But it's challenging. We hope that the crisis and the need for food security will make them realize that they have to step in and take control of the situation; otherwise, there's a risk it will never normalize."* (Respondent 4). This implies that the pelagic fisheries hold significant influence over the future of herring. It also acknowledges that these ships are driven by market forces. So, shifting the market and demand toward food consumption will steer the fisheries toward more sustainable production. The pragmatic perspective is in favour of applying market tools to influence the pelagic industry in contrast to the Reformist and Equity that argue for more dramatic changes such as fish ban or a complete reform of the governance of fisheries.

To make sure that the fishing industry is inclined to make the necessary changes, economic viability is essential to ensure prosperity for both fishermen and the processing industry. *"A long-term vision for the blue value chain of pelagic species in Sweden should be formulated. In relation to economic, social, and environmental sustainability, the vision should consider fishing, landings, transportation, the processing industry, storage, innovation needs, optimal use of by-products, and the interaction with imports. It should also take into account that long-term profitability at all stages is the foundation for the continued vitality of the value chain in Sweden."* (The Swedish Board of Agriculture, p 73). This storyline emphasizes the need to improve infrastructure, processing facilities and landings, instead of improving the herring stocks like the Reformist storyline is suggesting.

For the Pragmatic storyline, pelagic fishery is the key to increasing the utilisation efficiency of Baltic herring and is positive towards more processing facilities within Sweden. The positive outcomes for increased food supply and processing are job opportunities, regional taxes and demand for other products. This storyline is more concerned about the human and business benefits it can provide. Something that is articulated by the Swedish Board of Agriculture: "*That Swedish food production should increase while achieving relevant national environmental goals, with the aim of creating growth and employment and contributing to sustainable development across the country*. *The Board sees no conflict between the goals of the strategies for commercial fishing and food production."* (Own translation Swedish Board of Agriculture, p. 61). During interviews, respondents discussed various strategies to harvesting the ocean in the "best" possible way, balancing profitability with ecological preservation. To achieve that, increased processing capacity is vital.

This approach aligns with Sweden's food security goals, creating a "win-win" scenario where adding value to herring reduces overfishing and increases landings. This belief underpins the narrative that strengthening the efficiency of the utilisation and improving infrastructure will naturally lead to sustainability.

Knowledge and marketing will increase demand

Lastly, this storyline is not only placing the responsibility on fisheries industries but is also involving consumers. This consumer focus contrasts sharply with other storylines which advocate changes in governance and regulations. One identified strategy to increase demand is to increase the knowledge about the dioxin in Baltic herring, and that depending on how it is processed, consumption will not lead to health issues. As the industry is business owners, and the market is a key factor, to increase direct consumption there must be a demand for herring from consumers. A blog post from The Swedish Board of Agriculture highlights this focus: *"That's*

why Swedish processing industries, fishermen and researchers are focusing on developing new products to increase demand. New products can also make it possible to utilize a larger portion of the fish than today, for example by using parts of the fish that currently don't become food." (Own translation, The Swedish Board of Agriculture, 5/4/24). Additionally, the Swedish Board of Agriculture highlights the potential of Sweden's blue value chain in promoting consumption of domestic seafood*: "Sweden's blue value chain, which extends from fishermen to consumers, is an important part of promoting domestic climate- and environmentally smart food development with a low climate footprint and robust food supply chains*." (The Swedish Board of Agriculture, 2023: 13–14).

The Swedish Board of Agriculture also argues that it is important to reconsider the recommendations written by the Swedish Food Agency to increase demand. *" The National Food Agency should be tasked with examining whether dietary recommendations for herring can be differentiated for different consumer groups and regions. The agency should also be tasked with investigating whether dietary recommendations for herring could allow for greater consumption during a crisis period. How these differentiated recommendations are communicated to consumers can be assumed to be particularly important."* (The Swedish Board of Agriculture, 2022:78). Responsibility for change is shifted from the fisheries industry to consumers, who are seen as key to transforming the current fisheries model. Increased consumer awareness is essential, especially given that concerns about dioxins and overfishing in fish have led to reduced consumption

As a final note, the Pragmatic perspective highlights the issue of low direct consumption and production of herring in Sweden. To address this, greater economic incentives are needed to encourage larger businesses to focus on direct food production rather than industrial fodder production. Another driver for market change is increased consumer demand for herring. Through educational campaigns and effective marketing, it is hoped that this demand will improve overall utilisation and consequently, the sustainability of herring since there will be less waste of herring parts if the utilisation is improved. Lastly the price of herring for direct consumption is higher compared to industrial forage (Hornborg 2023),

5.2 Reformist: The Critical storyline

The second storyline adopts a more critical stance toward the current governance system, with a clear opposition to the exploitation of herring in the Baltic Sea. The respondents who advocated this storyline were respondent 1 (WWF), 3 (Marine ecology researcher), 5 (County administrative board) and 6 (Researcher on seafood). It also criticises the role of market-based drivers in Baltic Sea fisheries, which often fail to account for ecological limits.

5.2.1 Problem - the current system is failing

The Reformist storyline offers a critical view that underscores the need to prioritize healthy fish stocks over short-term economic gains, as a contrast to the Pragmatic storyline that identifies market drivers as the best tools to change the current fishing methods utilization. Accordingly, improving herring stocks must come before there is any discussions on food security. One respondent expressed scepticism about the current influence that the large-scale pelagic fisheries have in the Baltic Sea: *"No, I don't think there is a place for everything. There is room for moderation, but then you must question the moderation of having such large boats. They cannot fish in moderation, I think it is difficult to fish in moderation, and then there must be an incredible amount of more fish to be able to fish that way. Otherwise, it becomes very noticeable in the places where they fish, in that they remove such a large part of the biomass there that the ecosystem becomes so disturbed locally and regionally."* (Respondent 5). One respondent questioned the influence of pelagic fisheries and market priorities in governance of herring*: "But are they (pelagic fisheries) the ones who should decide? The short-sightedness? (...) The private boats don't own the fish. Management is so fragmented that we can't prevent this ecosystem collapse because we prioritize private income and employment. And not many people are employed on those boats (pelagic boats)*" (Respondent 6). This contrasts with the pragmatic storyline where the industrial fisheries are treated as the key players in securing fish for food. Instead of only promoting herring as food opportunities, respondents of the Reformist storyline often prioritized improving fish stocks as well as the ecosystem.

Compared to the Pragmatic perspective, which argues that better utilization of herring will lead to improved sustainability, the Reformist view sees unsustainable fisheries governance as the core issue. Without addressing this, improved efficiency and utilization will not resolve the challenges facing Baltic herring.

Instead, the primary focus should be on restoring the ecosystem's balance to ensure long-term sustainability. One scientist emphasized this perspective: *"This is our last important food resource for food preparedness. And if people don't want to eat herring today, they will in a crisis. It's important from that perspective, but it's also about the entire ecosystem it's such a cornerstone, and it's the last (keystone species) one we have. So, it's alarming that it's not being taken more seriously."* (Respondent 6). In this storyline, ecological considerations should be in focus over the market and economy as they are currently in contrast with each other. Therefore, if the herring stock is to be used for food production, the pressure from fisheries needs to decrease so there will be fish in the future. Below are the solutions in reducing the pressure and why market solutions are seen as negative for the ecological sustainability.

5.2.2 Solution - change the current system

A common theme in the Reformist perspective is that the current governance system is failing to create sustainable production, which should be an essential component of food security within Sweden. Therefore, instead of letting the market drive the fisheries business, this perspective stresses that the health of the herring stock should take precedence. Prioritizing ecological health and sustainability must be the foundation for any long-term food strategy in the Baltic Sea. More extensive transformations are required beyond focusing on landings and product development as the pragmatic perspective encourages.

The stakeholders of the Reformist narrative are concerned about the state of fish stocks, emphasizing that the decline of herring affects not only fisheries but the entire Baltic Sea ecosystem. A county board representative illustrated this concern: *"We agree today that we fish too much, even large-scale fishing, but on the other hand, it is the case that in, that is the next step we must take, not asking the question how much we fish but how we fish. Where large extractions of herring become like open wounds, or tears in the ecosystem. It doesn't work in the Baltic Sea, I don't think it works in many other seas either, it's so clear that it doesn't, when you remove these key players (herring)."* (Respondent 5). The respondent claims that as a key species herring, supports the survival of many other marine organisms and its decline could trigger cascading effects throughout the ecosystem.

Instead of researching different solutions to use herring more efficiently, this storyline directs strong criticism towards the current governance and economic drivers. Respondents argue that MSY-based management is incompatible with sustainable fisheries. One scientist explained: *"The policy of aiming for MSY is, on the one hand, a logical fallacy, it's impossible to apply it to all species simultaneously* (…) *Ecosystem-based management has been discussed for a long time, but this is one of its most fundamental aspects, and it's not some vague idea minimizing fishing pressure on key species crucial to the ecosystem. That's where we need to start. A completely different goal is needed for fishing perhaps not trying to maximize yields but maintaining a robust and stable level, reducing the catch regardless of whether it's for fishmeal or direct consumption."* (Respondent 3). MSY is heavily criticised for not considering the ecosystem approach. Therefore, and ecosystem-based approach to governance is encouraged.

This perspective challenges the notion of the Baltic herring having potential to be used for food security, as it has a high risk of collapsing, and thus challenges the viewpoint of the Pragmatic storyline that encourages a higher degree of trust towards the experts and that ICES would not let it collapse. The Reformist storyline is based on evidence taken from historical examples of fish stock collapses. One

scientist highlighted this risk: *"People don't believe it (herring) can disappear. It's very strange because there are historical examples showing that it can disappear. The Atlantic herring and Norwegian herring have been closed to fishing for 30 years and are only just starting to recover."* (Respondent 3). Another respondent elaborated on these historical warnings: "*Herring had been severely overexploited in the North Sea during the 1970s, and a fishing ban was introduced then. But today, it's incredibly difficult to implement a fishing ban I don't know why compared to the 1970s. A fishing ban for one or two years would have been interesting."* (Respondent 6). The argument in the Reformist storyline is that sustainable production cannot emerge from an unsustainable system. Respondents emphasize the need for governance rooted in ecosystem-based management rather than MSY. WWF shares this critique, particularly regarding recent quota increases. A WWF representative noted: *"Our red list of Baltic herring might have changed if the fish quotas for 2025 had not been raised so dramatically. But we don't evaluate fishermen, we evaluate the management systems. We look at how the stock assessments appear and how decisions are made in management. If they had decided to halve the quotas, then perhaps it would have ended up with a different colour."* (Respondent 1). This perspective reinforces the belief that effective management, not increased quotas, is crucial for rebuilding fish stocks and preventing further ecological degradation.

The Reformist storyline calls for a reform of the existing fisheries governance institutions in the Baltic Sea, emphasizing that the health of the ecosystem must be prioritized over economic and social factors, as it forms the foundation of everything. The Baltic herring collapse could have severe consequences. Therefore, a precautionary approach to fisheries is essential, with a significant reduction in fishing pressure to ensure the future of herring as a food supply but also for the broader ecosystem.

5.3 Equity: Participation is vital

Small-scale fisheries are facing an insecure future, lower uptake and small impact on the ecosystem making them the most ecologically sustainable fisheries. The respondents that argued for this storyline was number 2 (Small-Scale entrepreneur), 5 (County administrative board) and 7 (Small-scale fisher). However, the sector is facing existential challenges, including declining fish stocks, an aging workforce, and the absence of tailored regulations that specifically support small-scale practices.

5.3.1 Problem- Small scale is threatened

One problem that was identified was that this storyline expressed a frustration of the current rules and regulations for small-scale fisheries that is unproportionally

impeding the small-scale producers compared to pelagic fisheries. One respondent expresses frustration when discussing the blanket approach of current policies, which apply the same rules to both pelagic and coastal fisheries "*They mix everything into one big pool, and that's not good. Most importantly, we can't access the local catch. You can't sell your own fish unless you have your own business. Fishermen have to throw fish back because they can't find a way to sell it."* (Respondent 2). The overexploitation of herring stocks by industrial operations disproportionately affects small-scale fishermen, who rely on healthy local ecosystems for their catches. There is a frustration that the regulations are aiding the pelagic fisheries instead of supporting the fisheries that is producing food in a higher degree. The small-scale fisheries are considered ensuring sustainable fisheries, that both is sustainable and providing locally caught food. As the boats are connected to a region, the fishermen are inclined to take care of the resource that they have.

These injustices aggravate the challenges faced by small-scale fisheries, threatening their ability to preserve cultural practices and contribute to sustainable food production. The decline of large herring has compounded challenges for coastal fisheries. Unlike pelagic operations, which prioritize volume over quality, coastal fishermen require specific sizes of herring for food production. This limitation, combined with overfishing and inadequate regulations, threatens their long-term viability. Coastal fisheries represent a vital link in achieving sustainable governance of herring. One small-scale fisher complained:*" It is not hard to get people into the fisheries business, but the problem is that there is nothing to fish."* (Respondent 7).

These factors position coastal fisheries as critical to food preparedness during crises. A WWF representative remarked: *"We are supposed to be self-sufficient in a crisis but look at how society is structured today. Where would we find that self-sufficiency? In the fishing industry, we won't have it unless people can go down to the coast and fish for themselves and that is something we are in the process of destroying."* (Respondent 1). In this storyline, it is more problematized that the herring stock is at critical levels, as compared to the pragmatic, that observes this decrease as a lesser threat. Meanwhile the respondents from this perspective are worried by the disappearance of fish along the coast that leaves coastal fishermen without resources. This loss not only undermines local food preparedness but also threatens the ecosystem balance. This is also influencing the number of fishermen that could make up for food security both in peace times and during crisis. One respondent noted: *"Food security is upheld not by the trawlers that are catching tons of fish that no one in Sweden can process, but by coastal fisheries."* (Respondent 6). There is also a critique of the disappearance of the processing that could take care of the catch of locally caught fish. *"In the past, fishermen could just*

leave their catch at the dock, but now they need to think about increasing the value of the fish they catch, as the middlemen are no longer there." (Respondent 2). That would also both strengthen the food security but also the small-scale fisheries opportunities to uphold a sustainable fishery and processing.

The problem is that the fisheries policies are more encouraged to improve industrial fishing than small-scale production. This is making it harder for small-scale fishermen to make a living. The lack of fish also disproportionately affects small-scale fishers, as they rely on larger herring that travel to the coastal areas during specific times. In contrast, larger vessels target biomass found in the open sea and size and travel areas is therefore not as important. Below are the solutions to these problems that are identified by this storyline.

5.3.2 Solution – less regulations for small-scale fisheries

Critical storylines from the Reformists and Equity converged on the idea that if any fisheries sector is to endure, it should be small-scale, regional production. In this storyline, coastal fisheries are perceived as the most sustainable approach to herring fishing. One solution that the Equity storyline identifies is more restrictions on fisheries licenses, as one respondent noted: *"This tie into the idea of introducing geographically linked fishing licenses, because currently, if you get a fishing license, you're allowed to fish anywhere. Of course, there must be oversight and control, but it's essential to allow local initiatives to develop independently. This has been stifled by the current restrictions on granting new fishing licenses."* (Respondent 5). The proposed solutions included implementing regionally bound licenses and differentiated rules to support sustainable practices. Certain regulations are making life harder for small-scale fishermen than for industrial fisheries. For example, certain fishing licenses gives you the right to fish anywhere, which makes vessels less inclined to stay to one area. As they can" empty" one part of the sea and then move on to the next. Therefore, a local smaller vessel will have more struggles if the fish in one area is overfished as the smaller vessels lack the ability to move greater distances. By having regional fishing licenses would decrease the overfishing overall according to the Respondent. Moreover, fishers all over the Baltic Sea would be encouraged to help maintaining healthy herring populations.

The decline of coastal fisheries is a concern not just from an ecological and food security perspective but also culturally and economically. According to the Equity perspective, small-scale fishermen often regard fishing as more than a job, as it is a way of life, much like farming. One respondent explained:*" Many of the small-scale fishermen also want to make a living, but they are accustomed to getting a certain amount and then selling it. There are also fishermen who just want to be out fishing. For pelagic fishermen, it is a profession. But for many others, it is also*

a way of life." (Respondent 2). However, the number of small-scale fishermen has been in steady decline. Respondents attributed this trend to an aging workforce and the inability of new fishermen to establish themselves. This sentiment was echoed by others, who pointed out the decrease of coastal fishermen: *"Everyone is saying the same thing: the profession is getting smaller and smaller, and it's impossible to renew."* (Respondent 2). Coastal fishermen are essential for sustainable production and crisis preparedness, possessing the knowledge and skills to harvest fish locally. Yet they face many challenges, from declining fish stocks to the increasing need to handle all aspects of the value chain themselves, fishing, processing and product development.

Decreasing industrial fisheries

In the Equity storyline, there is widespread scepticism about the role of industrial fisheries in sustainable management and food security. Coastal fishermen argue that industrial fisheries cannot replicate the local, sustainable practices of small-scale operations. One small-scale fisherman criticised this assumption: *"I don't believe the government is taking the food security thinking seriously; they don't take it seriously. The problem is that they think the industrial fisheries can do what the small-scale fisheries do today."* (Respondent 7). Industrial fisheries are less affected by the lack of large herring, which is critical for traditional food production. In this storyline and in the Reformist storyline, the industrials are blamed for overfishing. Therefore, to secure the coastal fisheries' survival and their ability to catch and process local seafood, the number of large-scale ships needs to be reduced. This frustration is expressed by a respondent:" The *only truly profitable sector is pelagic fisheries, which have invested in new boats controlled by a few key players who catch large volumes. From what I understand, they rely on the Baltic Sea when fishing in the North Sea is prohibited. At the same time, they are very mobile, even traveling as far as Africa to fish. Smaller boats don't have this level of mobility. If we're to implement any measures, we could test reducing the number of large vessels. However, it's a very powerful organization, making it difficult to achieve."* (Respondent 6). The industrial fisheries are accused of taking too many fish, but a total ban is not necessarily the answer. This has to do with more regulations and specific regions where fishing can and cannot be done. One small-scale fisher envisioned a balanced approach: *"There's room for both large-scale and small-scale fishing, absolutely, if there are protected areas. But perhaps we can't fish as much as we do today. However, somewhere around 50,000 tons (of herring) can be fished sustainably if done in the right places."* (Respondent 7). Frustration is directed at the regulatory systems that hinder direct food production while allowing large-scale industrial fishing. Instead, regulations should aim to improve conditions for small-scale fishers who fish for direct human consumption, while limiting the excessive freedom granted to some larger vessels. This would help create a better

balance with what can sustainably support the current herring populations. One example, as mentioned by the respondent, is the establishment of protected areas, moreover the current fishing pressure must reduce.

Compared to the industrial fisheries, the small-scale fishermen are described as being excluded by core decision-making authorities like Swedish government and by EU. The regulations are in favor of industrial fisheries at the cost of small-scale fishers. *"There's a lot of work involved in processing herring, and there's a risk it will disappear if not addressed. Whenever proposals are made, the EU blocks them, prioritizing large-scale fishing over small-scale. Industrial fishermen aren't required to take as much environmental responsibility compared to us."* (Respondent 7). This ties into the idea that more regulations that are favoring small-scale fisheries are needed for sustainable fish production that can create food security. Compared to the Pragmatic that favors large-scale production to make it profitable instead of prioritizing the already sustainable small-scale fisheries.

Their regional focus, smaller environmental footprint, and emphasis on food-quality fish make them indispensable, particularly during crises. However, the industry faces existential threats from dwindling fish stocks, ageing workers and the lack of differentiated regulations to support small-scale practices. Proposals such as regionally bound licenses, improved infrastructure and tailored rules could help ensure the survival of smaller-scale coastal fisheries. These measures are critical to preserving not only the livelihoods of coastal fishermen but also the ecological and economic stability of the Baltic Sea region, according to the respondents. This is because small-scale fishing places less pressure on herring populations overall. Tradition and food security are also highlighted as important aspects of sustainability in this narrative. Many argue that, in times of crisis, it will be the small-scale fishers, not the larger vessels who are able to supply Sweden with fish. One argument is that Sweden lacks processing facilities to handle the industrial catch from bigger boats and therefore the smaller boats that can fish near the coast are essential for food security. Without such changes, Sweden risks losing a cornerstone of its food preparedness and marine sustainability.

6. Discussion/Balancing the different storylines

In the following section, I will critically discuss the empirical material from chapter 5 using the concepts of power and knowledge as well as environmental discourses mentioned by (Bäckstrand & Lövbrand 2006). This section is divided into two main sections: Power Dynamics in Small-Scale and Pelagic Fisheries/narratives of sustainability and Ecological modernisation, green governmentality and civic environmentalism.

6.1 Power Dynamics in Small-Scale and Pelagic Fisheries/narratives of sustainability

All actors share the belief that some form of change is necessary to improve the sustainability of the herring value chain. However, power dynamics and the knowledge produced by dominant actors significantly influence which solutions are pursued. As a consequence, knowledge is not fixed but is created through power and is produced by different actors, that creates different truths that shapes perceptions and actions (Barker 1998). The power imbalance between small-scale fishermen and industrial pelagic fisheries is evident. Knowledge that is produced as "truth" by the different storylines are in many ways contradictory. On the one hand is the Pragmatic storyline reinforcing the necessity of industrial fisheries to secure Sweden's herring supply during crises while the Equity argues that in the end it is the small-scale fishers that will fish food for direct consumption. The first narrative is perpetuated by the Swedish Board of Agriculture, pelagic fisheries, and other actors, asserting that industrial fisheries are essential for addressing Sweden's food security challenges. This narrative is criticized by the Equity and Reformist perspective for being the strategy that are analysed to a higher degree, such as the Swedish board of agriculture document on how to improve food security through pelagic fishing. This is reinforcing the official knowledge that is producing a truth that the pelagic fishing methods as the natural solution to food security objectives. Truths that are perceived as "natural" wield more power but they can also obscure complexities (Fairclough 2013). This framing underscores the power relations embedded in the social structures of small-scale and pelagic fisheries. For instance, a dominant narrative in the Pragmatic suggests that industrial fisheries in a higher degree ensure what the small-scale boats are already doing, which is catching fish that is used directly as food.

Similarly, the Swedish Board of Agriculture promotes cooperation between processing facilities and fisheries, positioning pelagic fisheries as the primary actor

capable of addressing the food crisis. The Swedish Board of Agriculture's strategy to increase pelagic fishery landings and fish consumption assumes that industrial fisheries are "natural" and integral to the Baltic Sea's fishing economy, despite opposing voices, including the WWF, scientists and small-scale fishermen, who advocate for either a prohibition on industrial fisheries or a reduction in fishing pressure. Political power is the domination of "the establishment of a particular set of storylines (and their related discourse)"(Hajer 1993), which means that policies are products of struggles. When a specific discourse is institutionalised, power is favouring a specific reality (Hajer 1993). The struggle over how the herring should be caught, used or even managed is a struggle over how the different stakeholders view nature and maritime ecology. When the Board of Agriculture is positioning itself within the discourse of the Pragmatic storyline that encourages a more "green growth", they are exerting power, while marginalizing the Equity and Reformist storylines.

Knowledge shapes objects and subjects, creating a "battle for truth" amongst actors. For instance, there is two main narratives struggling over the "truth"; the first perspective that are produced by the Pragmatic asserts that the herring situation is not as dire as the Reformist and Equity argues, and it will recover eventually with the current fishing pressure, dismissing suggestions of fish bans and other restrictions that scientists and media are suggesting. Instead, the Pragmatic attributes the decline of herring stocks to environmental factors rather than overfishing, emphasizing that industrial fisheries are unjustly blamed. The second narrative are driven by the Reformist as well as the Equity, argue that industrial fisheries are the primary cause of the herring stock crisis, and the most effective solution to decrease fish mortality is by decreasing the large-scale fishing until the herring have recovered and even after to prevent overfishing. Truth, as Barker (1998) suggests, is not about absolute reality but about the status and legitimacy of certain perspectives. In this case, the truth is in favour of pelagic fisheries, supported by their role in official food security narratives which exerts power.

The Swedish Board of Agriculture's endorsement of this truth further empowers industrial fisheries, allowing them to shape policies and actions that favour their interests. At the same time sidelining arguments from the WWF and small-scale fishermen advocating for more drastic measures, such as a ban on industrial fishing. One such is that the industrial fisheries possess significant influence and resources, but they represent a relatively small portion of the fishing industry overall.

The government issues an assignment to increase the herring as food, while in turn disregarding the Reformist and Equity storylines and empowering the Pragmatic storyline. The next sections will discuss how the global discourses can explain why

and how actors argue for certain solutions and why they problematize different aspects.

6.2 Ecological Modernization

The discourse emphasizes technological innovation and market-driven solutions as pathways to addressing environmental challenges (Bäckstrand & Lövbrand 2006). For example, when the Pragmatic storyline is framing industrial fisheries practices as adaptable rather than fundamentally flawed, the perspective avoids addressing systemic issues, such as overfishing and ecological degradation which is in line with ecomodernism. As Bäckstrand & Lövbrand (2006) note, relying solely on green capitalism risks reinforcing existing inequalities and environmental harm rather than fostering transformative change. This aligns with the Pragmatic storyline that seeks to find a middle ground, the flexible solution of nudging the pelagic fisheries towards food security. To do that, the storyline relies on encouraging economic benefits that will decrease the fisheries pressure. The discourse of ecological modernization, encourages flexibility and cost effectiveness as the best strategies towards a more sustainable resource governance (Bäckstrand & Lövbrand 2006). Similarly, the Pragmatic encourages that the change toward a more sustainable use of the herring is going to be driven by the fisheries industry themselves, which will be the most effective strategy.

The Pragmatic storyline argues that the fisheries business can become more sustainable with a few minor changes. One change suggested is to sort the bycatch better, so that more fish can be used as food. To do that, economic incentives are suggested to increase the industrial fisheries production of seafood. This means that pelagic fisheries would not have to change their operations to get a better profit from herring than they would if they fished solely for forage. In the Pragmatic storyline, if there are economic incentives to catch the fish more sustainably and the change requirements for pelagic fisheries are minimal, is portrayed as a win-win situation for everyone involved. Something Bäckstrand (2006) calls “maximised synergies”. According to ecological modernisation, if a resource would disappear that would be costlier for the involved business, actors would be more inclined to protect said resource as the destruction would be much more costly (Berger et al. 2001). The Pragmatic discourse does not believe that the herring can disappear as the fisheries would not allow that to happen, otherwise they would be destroying their income. This logic resonates with the discourse of ecological modernisation that suggests that destruction of the herring stock is impossible as the industrial fisheries would ruin their income.

Ecological modernization’s promise of a gradual transition to greener practices is criticised for perpetuating the "business as usual" approach (Bäckstrand &

Lövbrand 2006). The Pragmatic storyline emphasises economic growth and social sustainability as two main pillars if sustainability would be improved. The storyline was deeply against the idea of fish bans and other larger restrictions that would limit the fisheries business, because in their view, if a fishing ban would be introduced this would not benefit anyone. The Pragmatic storyline argues that the social and economic values would decrease by a fishing ban, as well as food security. Instead, the aim should strive for gradual change, such as using more herring as food. This would increase the sustainable production of food and encourage larger vessels to fish more for food and would require them to fish smaller quantities with higher quality and therefore putting less pressure on the ecosystem. This narrative downplays calls for drastic measures, such as fishing bans, and instead promotes gradual adaptations favouring decentralised market solutions to promote greener investments and technology. Hajer (1993) writes that there is a belief that if existing societal arrangement such as economy and various forms of environmental protection are changed, the environmental crisis can be solved. But that will not bring actual change if the solutions are market driven. While all the storylines agree that large herring is needed for food production, the Reformist and Equity storyline argue that the large herring decline is a warning sign that something is wrong with the herring population. Large herring are primarily used for direct human consumption, whereas industrial fishing is focused on overall biomass and is less concerned with the size of the fish. The disappearance of large herring near the coast is not viewed as equally urgent by the Pragmatic storyline, since small-scale fisheries do not contribute to large-scale food production or economic profit in the same way as industrial operations. As a result, small-scale fishing is not actively promoted, as it is perceived to be less efficient and less cost-effective than large-scale fisheries.

The problem, that arises when market-based solutions are applied to a natural resource governance dilemma, is a disregard for social justice. When the economy is prioritized, other values can become marginalized (Dryzek 2013). This thinking is mainly prevalent in the Equity storyline that criticises the Pragmatic thinking where the main solution always is to manage the fishing industry with market-based solutions. According to the Equity and Reformist storylines, this economic prioritization disregards the more equitable approaches. This can also explain why the Pragmatic storyline has difficulties seeing how a fishing ban could be implemented, since their primary priority is to make profit, something that cannot be achieved if the resources are inaccessible.

The endnote is that the storyline of the Pragmatic can be explained by ecological modernization. The solutions that are proposed are not as drastic or radical as the Reformist which implies that it is more a greenifying of the business rather than an

actual change. The ecological modernisation encourages cost effectiveness, something that also implies that the "easier" solution, the cheaper it will be. Therefore, to presumably save costs they are encouraging the pelagic fisheries not to change how they fish, but to sort the bycatch better, and fish more high-quality food, encouraging market driven solutions to environmental issues. The next section will discuss how the discourse of green governmentality.

6.3 Green governmentality

Market driven solutions to environmental issues are frequent in the ecological modernisation discourse, the operational discourse. That which upholds the legitimacy is green governmentality (Bäckstrand & Lövbrand 2006). While the discourse of ecological modernisation encourages market driven solutions and increases the legitimacy of certain truths, the discourse of green governmentality has changed this focus and made way for expert driven solutions focusing on measuring sustainability. By depicting herring fisheries as a potential for food security and a low climate impacting food resource, and at the same time describing the issues as an infrastructure and social question, opens different ways of measuring and talking about the herring.

Green governmentality relies on rational, scientific approaches to managing natural resources and human-nature relations, rooted in the relationship between power and knowledge (Barker 1998; Luke 1999). In the context of fisheries, industrial actors advocate for measures such as green investments, technological advancements and increased efficiency to maintain current practices while seemingly addressing ecological concerns. For example, the Pragmatic storyline highlights the abundance of herring based on the ICES data. This indicates that the Pragmatic storyline sees sustainability as something that can be measured in line with green governmentality. This is contrary to the Reformist storyline, that argues that there are not enough diverse values included in the ICES measurements to determine if the catches are sustainable. Instead, the Reformist arguments are often dismissed in favor of legitimizing measurement and control through a technocratic lens. When nature is understood in technocratic terms, it legitimises "eco knowledge" which can marginalize other knowledges (Moran & Rau 2014).

The eco-knowledge makes way for extended control of the state and other actors (Bäckstrand & Lövbrand 2006). Claiming that ICES is a measurement of a fish stock health gives control over which truth that is correct, extending the power to certain actors. Managing a resource in scientific terms legitimises exploitation (Bäckstrand & Lövbrand 2006). Whilst the stakeholders from the Reformist storyline acknowledges that a healthy herring stock is needed to fulfil the ambitions

of food security, it is not argued for in the same intensity as the need for infrastructure and processing facilities, interventions that aim to control the resource, while at the same time excluding other perspectives on the sustainability of herring. For example, the coastal small-scale fisheries are claiming that the large herring has disappeared. This perspective is not gaining as much ground as the industrial perspective of securing food for Sweden.

Another theme that is prevalent in this discourse is the reliance on top-down managerial solutions to environmental problems. The optimistic view of green governmentality which emphasizes balancing economic, ecological, and social sustainability is critiqued by the civic environmentalism discourse. This critique claims that such an approach may lead to a separation between society and nature (Bäckstrand & Lövbrand 2006). The discourse of green governmentality is prevalent in the Pragmatic arguments when they discuss the herring. As the focus is not on the ecosystem but how the herring uptake can be controlled. The Swedish Board of Agriculture discusses how Sweden could increase the landing of Baltic herring, but only from an anthropocentric view, ignoring the fact that a healthy ecosystem is vital for increasing the landings. This leads to a technocratic view that disconnects the herring catch from the ecosystem, seeing the herring as a commodity that can be dominated and controlled.

Another storyline that the pragmatic stakeholders describe, that corresponds with green governmentality, is they agree that the ICES is a valid method to decide the health of the Baltic herring stock. Measuring a natural resource gives a sense of control, which is why some of the stakeholders from the Reformist storyline doubt the opposing claims that the herring stock can collapse. They are in a way legitimising a measurable technocratic view of a resource. This implies, that a natural resource is something that humans can shape, dominate and control, and disconnects humans from the ecosystems in favour of legitimising top-down control (Fogel 2005).

The legitimacy of pelagic fisheries in the Reformist storyline appears from their ability to secure food supply efficiently with minimal changes to the current system. The sustainability of their fishing methods is primarily measured by ICES, which in turn legitimises their practices. Ecological modernization promotes both economic and ecological benefits, If ecological modernization serves as the "legitimising" discourse, then green governmentality functions as the operational discourse, providing tools to disconnect the resource from the ecosystem and enabling what is labelled "sustainable" exploitation (Bäckstrand & Lövbrand 2006).

6.4 Civic environmentalism

The last discourse, civic environmentalism, can be found in the Reformist and Equity storyline. In this discourse, the ecological modernisation and green governmentality discourses face significant criticism. Especially the focus on market driven solutions to environmental issues.

This storyline is critical of the narrative of food security of an endangered species and that economic and social benefits must not come at the expense of ecological sustainability. The discourse of civic environmentalism is critical of the win-win narrative that ecological modernisation promotes, that economic, social and ecological sustainability can be achieved simultaneously (Bäckstrand & Lövbrand 2006). Therefore, it strives to achieve a structural transformation of global capitalist institutions and counteract inequalities (Paterson 2000; Bäckstrand & Lövbrand 2006). This thinking is similar to the Reformist storyline, as they argue that the current economic short-term gains are destroying the herring stock, and the other species that are dependent on the herring for their survival.

Similarly, as the radical civic environmentalism, the Reformist storyline is critical to market-based solutions to increase the sustainability of the herring landings. The Reformist storyline emphasises an ecosystem-based governance that conflicts with the current trust towards measurements like ICES and MSY. As an alternative to MSY, the ecosystem should determine the fishing pressure. The discourse of civic environmentalism also derives and highlights the environmental consequences. The current institutions and consumption patterns need to convert towards a more nature-centric world order.

Critically analysing power and structure are central focuses if things are to change (Bäckstrand & Lövbrand 2006). This is a key element that the Reformist storyline advocates for a transformation of the governance that is currently allowing the continuation of overfishing by focusing on the economic profits and not prioritizing ecological sustainability.

The respondents from the Reformist storyline argue for a systemic change of the fisheries business, where the arguments are not driven by economic goals and market solutions. The change within the economic system, that the Pragmatic storyline advocates, is inadequate according to the Reformists, as it disregards other natural resource users from the ocean. The discourse of civic environmentalism is critical towards institutions that are in favour of market-based approaches and neoliberal policies. and argues that systematic oppression exerted by capitalism and state sovereignty is hindering effective solutions to different environmental crises (Bäckstrand & Lövbrand 2006). The Reformist perspective is offering similar

criticisms towards capitalism and policies that are oppressing certain actors, complaining that these solutions will collapse the Baltic herring instead of solving the issue. To create a lasting change, the fisheries industries' goals need to change towards a more nature-centric view instead of how to increase catch yields and economic profit, as these short-term goals will fail to create an actual improvement with the current governance system.

The Reformists argue that the food security arguments are focusing on the wrong problem and that focus instead should lie on the real issue, which is the current governance' failure of preventing overfishing. Only focusing on food security and consumer habits will divert the arguments from the real issue of improvements of the critical condition of the herring.

A common theme of the Equity storyline is that they are distrustful of the government's efforts to increase the food security and the direct consumption of herring. By not including the small-scale sustainable contribution to the food security narrative, they are disregarding the knowledge of small-scale fisheries. The radical civic environmentalism discusses that participation through the state is good, as it might underline power dynamics such as sovereignty or capitalism that generate the environmental crisis. (Bäckstrand & Lövbrand 2006). Additionally, the government is disregarding that the Pragmatic storyline is not the most effective way to achieving a constant food supply. The ecological modernisation discourse encourages efficiency instead of creating a transformative ecological change. Concentrating on maximizing economic value will often marginalize the more nature centric narratives and disregard real transformative ecological change (Bäckstrand & Lövbrand 2006).

When the Pragmatic actors are positioning themselves in favour of industrial pelagic fisheries, they are disregarding the cultural and ecological knowledges of the Reformist and Equity storylines. By developing a strategy on how pelagic fisheries can increase consumption of seafood to strengthen the food security, they are empowering the pelagic fisheries. Power determines which knowledge that is perceived as natural. Furthermore, small-scale fishermen emphasize the need to incorporate local ecological knowledge, such as observations about herring size and quality, which is often overlooked in data-driven, green governmentality narratives. Meanwhile the critical voices are raising concerns over the very existence of industrial fisheries, at least in the large scale they are today.

7. Conclusion

This thesis has explored the diverse perceptions among stakeholders in Baltic Sea herring governance and how their competing narratives shape policy and management approaches.

In response to the first research question “what are the different perceptions from stakeholders on Baltic Sea herring governance?” The study identified three dominant perspectives. Firstly, the Pragmatic perspective views herring as an economic resource and prioritizes efficient utilization and food security, relying on institutions like ICES to determine sustainable catch levels. Secondly, in contrast to the pragmatic the Reformist perspective argues that governance structures are unsustainable and must be fundamentally reformed to protect the herring population, emphasizing the important role the herring has for the ecosystem. Lastly, the Equity perspective challenges the power imbalances in fisheries management, arguing that current policies disproportionately benefit industrial fishing while marginalizing small-scale stakeholders.

For the second research question “how different storylines from diverse stakeholders are being told and why?” the findings reveal that these perspectives are rooted in broader environmental discourses. The Pragmatic narrative aligns with ecological modernization and green governmentality, treating sustainability as a matter of efficient resource use within the existing economic system. Furthermore, that sustainability and maximum pressures can be measured with the models provided by ICES and MSY. In contrast, the Reformist narrative advocates for a more transformative approach in conformity with the discourse of civic environmentalism. It is critical that current policies and institutions are not enough to prevent an ecological collapse, instead a new system is needed. This perspective is critical of the win-win narrative advocated by ecological modernisation, that promotes the idea that economic profit can go hand in hand with ecological sustainability.

The Pragmatic perspective currently holds the most influence, reinforcing economic drivers in fisheries management. Meanwhile, the Reformist and Equity perspectives challenge this framework, calling for more inclusive, democratic, and locally based solutions. These findings highlight the need for a more participatory governance approach that considers multiple perspectives to ensure a balanced and sustainable future for the Baltic herring.

Ultimately, this thesis underscores the importance of analysing environmental discourses in natural resource management. By examining the narratives and

arguments of different stakeholders, the thesis contributes to an increased understanding of how sustainability is defined and contested and how these competing views could lead to different governance outcomes for natural governance.

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Appendix 2?

Interview guide for stakeholders: (translated to English)

Main questions	Potential following up questions	Goal of the questions
1. Tell me about your work, and how you are working with the Baltic herring?	1. How did you end up working with the BaltiC herring? 2. In what ways do you work with the Baltic herring?	To get a background and understanding of their position in the discourse.
2. How would you describe the problem(s) in creating sustainable food chains/value chains?	1. Why can't we see eye to eye in this resource governance? 2. Are the current governance enough?	How is the nature of the problem described and formulated
3. What do think are the solution to increase the herring?	1. Is it possible to increase the landings and food security?	To get their suggested solutions tells a lot on where they stand in the discourse and what storylines they use.
3. Is the herring fishery sustainable today?	1. Why o you think that? 2. (If no) How would you improve it?	How they view sustainability, which values they are putting first.
4. Do you think that by including the herring in the food security strategy will increase the sustainability of the fisheries?	1. In what ways? 2. How could it be further improved?	If they believe in the current system or not.

5. Thank you for taking your time to answer the questions.	1. Is there any area that you think we missed?	In case the respondent feels that we missed something that they argue are important to add.