



THE GLOBAL DANGERS OF GOOD INTENTIONS

Addressing the Swedish and Norwegian Approaches to Combat Climate Change

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The abstract

This thesis is a documentary analysis researching two National Communications (NCs) under the United Nations Framework Convention on Climate Change (UNFCCC), representing the gathered attempts of two of our most environmentally prominent countries, Sweden and Norway, in how they combat climate change in a global context. The research gives insight into how two of the most environmentally prominent countries continue to improve in international sustainability ratings while global emissions continue to rise and how they are using their resources to combat climate change on an international level. The theoretical framework used to add depth to the answers to the research questions consists of an Anthropocentric versus an Ecocentric perspective based on Green Economy versus Environmental Economics, Shallow Ecology versus Deep Ecology, and Weak Sustainability versus Strong Sustainability. It results in the insight that the nations have a significant impact on global society through their collaborations, economic interests, emissions, and policies. However, the Ecocentric perspective is prioritized to a lower degree than the Anthropocentric perspective. The ecocentric attempts from these nations are limited due to their national economic interests and international policy incoherence. This results in them reducing the effects of climate change within national borders while their actions promote economic growth at the cost of the global environment.

Keywords: *environmental economics, deep ecology, strong sustainability, green economy, shallow ecology, weak sustainability, National Communications, Sweden, Norway*

“every bit of warming matters, every year matters and every choice matters”

- Housing Lee, Chairman of the IPCC (SBSTA-IPCC, 2019, p. 3)

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Bodø Maj.22 2023

A handwritten signature in black ink, appearing to read 'J. R. Kriström', with a long horizontal flourish extending to the right.

Jonathan Rudholm Kriström

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“According to the latest IPCC report, “The scientific evidence is unequivocal: climate change is a threat to human well-being and the health of the planet. Any further delay in concerted global action will miss a brief and rapidly closing window to secure a liveable future.” The report calls for urgent climate action now.”

-UNFCCC, 2023

1. Introduction: An appeal to tomorrow

We are living in a time of grand evolvment. The potential to fast-track an idea into reality is greater than ever before. Along with this grand potential come great challenges, which are everywhere we look as human development has led our lives to depend on unsustainable habits as the global population is stuck in unsustainable societal structures. As challenges grow increasingly clear, the action they demand of us looms over us all in an ever-increasing dystrophic vision. The how, what, where, when, and why seem stuck in political agendas, limited belief in human potential, and most of all, the resilience of societal structures steering our behavior in the very patterns that have put us in the position we are in. There is an epistemological dissonance in how the concept of sustainability is interpreted. Because of it, it lacks a solid framework from which it can be fairly evaluated. The dissonance allows governments, businesses, communities, and international cooperations to formulate themselves as more environmentally considerate than they are (Skirbekk, 2020).

“Public Administration have to significantly improve and build new institutional capacities, not only to “manage” such crises but to govern and administer them with agility in all their dimensions and implications, and to develop resilience, robustness, forward-looking capacity, solidarity and rapid and reliable recovery at all levels of public governance”

(European Group for Public Administration, 2022, p. 1)

As the impacts of climate change are felt throughout the world, these governments, businesses, communities, and international cooperations need to bind together to lower their carbon footprints. To overcome this challenge, they need ways to mitigate Greenhouse gas (GHG) emissions and transition into a global society in balance with the natural limitations of our global ecosystem (Jackson, 2016; O Jakobsen & V Storsletten, 2018; Næss, 2005; Welford & Gouldson, 1993).

As we strive for a global baseline of democratic decision-making, it becomes abundantly clear that democracy itself is operating in ways too slow to tackle the challenges we face. However, we need to use what we have and, from that, take a step back and gaze upon the shared vision of what it is we must strive for. We must be critical of our solution-oriented approach and step up if we are to overcome this too.

The closest attempt to increase the understanding of global sustainability, develop the means to improve global partnerships, and formulate a more valid strategy to tackle global challenges and acquire a global vision, is the National Communications (NCs) under the United Nations Framework Convention on Climate Change (UNFCCC). However, it is evident that the sustainability we should aim for is based on something other than rankings communicating which country performs better within their borders but which country performs best in uplifting the global community, mitigating global emissions, and supporting the global SDGs (Corlet Walker, Druckman, & Jackson, 2021; Jakobsen, 2019; Næss, 1995).

This thesis evaluates the good intent in Scandinavian sustainability made by lowering their national emissions and giving more than many others in a global context understood from two perspectives, the Anthropocentric and the Ecocentric, two concepts containing theory from Green Economy versus Ecological Economics, Shallow Ecology versus Deep Ecology, and Weak Sustainability versus Strong Sustainability. Doing so contributes to a more integrated understanding of sustainability in Sweden and Norway, their global interaction, and to the ongoing debate on effective strategies for achieving a sustainable future. Furthermore, reviewing the NCs and comparing how sustainably prominent countries recognize and represent the long-term vision of a sustainable global society is highly relevant and exciting.

“Crises are obviously devastating and hit numerous victims, but at the same time they often raise the civic and political awareness on the structural weaknesses of our societies, economies and politics, and they sometimes open some “opportunity windows” which give a wider room for manoeuvre and legitimacy to our leaders in order to adopt and enforce the needed reforms to strengthen ourselves in preparation of the challenges to come.”

(European Group for Public Administration, 2022, p. 5)

1.1. Relevance

The relevance of this investigation for academia is, first and foremost, for Public Science and Global Management as it delves deep into the discourse of global governance, which demands innovative and intersectional engagement. Seeking insight into governmental sustainability through international agenda is dealing with one of the most wicked problems connected to global warming. If more academic resources were to be focused on this area of interest, it could provide insight into more than the environmental agenda. These areas include trust and legitimacy for public instances, raising public engagement, and the continued importance of audits, specifically transparency and accessibility of information in international society.

In addition, the research is relevant to various stakeholders both in the public and private sectors, as well as to academia and the broader research field of sustainability. It can also provide insight into the effectiveness of international agreements and current strategies in achieving a balanced global ecosystem as it analyses two countries with a strong reputation of consistently standing at the frontier of environmental policy.

1.2. Background

This age of climate change has been referred to as the Anthropocene, where humankind is able to change the ecosystem in which we live (Lewis & Maslin, 2015, p. 171). How we live in this age has been referred to as Anthropocentric, in which humankind spends global resources faster than they can replenish, threatening our future survival. From this came Anthropocentrism, an approach to the issue

through economic growth (Jackson, 2016). The alternative to this was to change our ways in line with the global limitations, resulting in explicit principles like scaling economic activities within the natural limitations of our ecosystem, distribution of resources both within and between generations, increasing the efficient use of resources to avoid depletion of natural resources, and being careful in the face of environmental uncertainty and lack of understanding for the ecosystem (Daly & Farley, 2011). That line of reasoning strived toward a future where our way of reasoning is based on what is environmentally reasonable before considering whether it is economically viable (Hardt & O'Neill, 2017; Jackson, 2016). Such visionary thinking became known as ecocentrism (Gray, Whyte, & Curry, 2018; Kortenkamp & Moore, 2001). In line with this is the idea of nature possessing innate value, even spirituality, and that we need to consider our relationship with nature to be interdependent and in need of change if we are to ensure our long-term survival (Ove Jakobsen & Vivi Storsletten, 2018; Zsolnai, 2014).

"The magnitude, variety and longevity of human-induced changes, including land surface transformation and changing the composition of the atmosphere, has led to the suggestion that we should refer to the present, not as within the Holocene Epoch (as it is currently formally referred to), but instead as within the Anthropocene"

(Lewis & Maslin, 2015, p. 171)

The Anthropocene has been dominated by neoliberalism, arguably the ideology in most parts of the world today, since the 1970s (Connell, Fawcett, & Meagher, 2009). Neoliberalism aims to increase human welfare through growth in production and consumption. The main economic problem with this is that price is determined by demand, and a great deal of people lack purchasing power, resulting in economic segregation (Piketty & Saez, 2014). As it promotes competitiveness rather than collaboration, it fails to take adequate consideration of the systematic effects it has on the social and environmental values in society (Shrivastava, Smith, O'Brien, & Zsolnai, 2020). As such, neoliberal progress is almost synonymous with environmental degradation and could be understood as an anthropocentric ideology supporting an unlimited lifestyle in a world with limited resources (Costanza, 2014).

In public science, more insights in line with this can be found in the discourse between New Public Management and Post New Public Management (NPM). NPM is closely related to Neoliberalism in terms of values and ideology. However, while Neoliberalism advocates an ideology, NPM is the implementor of these values through the public sector. Cost efficiency, competition, and individualism are central to its understanding of public service. It stems from economic rationalism and post-industrial states competing for economic advantage (Hood, 1995). The effects of NPM have been overwhelming mainly because of its vaguely formulated intent to enhance the effectiveness in the public sector (Funck & Karlsson, 2019; Hood, 1995). This led to different interpretations of what constituted efficiency, resulting in differing justifications and intentions in different social services, an overlaying lack of accountability, and performance-based management with two eyes fixed on economic gain (Funck & Karlsson, 2019).

The problems of the Anthropocene could also be a result of the psychological limitations of the human mind (Shannon, McGee, & Jones, 2019). For example, it is due to stakeholders with conflicting interests, policy, and political barriers, lack of comprehensive data on the complexities surrounding the relationship between the environment and human activity, accurate valuation of environmental assets, and needing more public awareness and engagement (Weaver, 1986). These problems have thus far resulted in limited funds and resources directed at agencies and actors striving to achieve a sustainable society and a chronic need for instant gratification to quell the conviction of our future demise.

As a result of this economic focus, the world economy is projected to grow 200-fold by 2100 (Jackson, 2016). Thus, it is evident that the current welfare models' reliance on economic growth does not recognise the fact that we live on a finite planet. The existing global social structures are not enough to fulfil our global needs, and they have to change radically to adhere to the limitations of our ecosystem. This change can only take one path that radically accepts what we can gain from a potentially sustainable society, one that digs into the current paradigm and reinforces the functional aspects capable of change, and break away from what does not work to restructure global society where the current paradigm is not enough to face the challenges. The shift needs a better understanding of the complex relationship between productivity and economic growth and their implications for psychological, social, and environmental justice. Such a shift is termed a post-growth welfare system moving beyond the redistribution of resources and into a reevaluation of underlying policy models (Corlett Walker et al., 2021).

From an organizational and psychological perspective, creating a vision of the intended future genuinely accepted by the parties involved is an essential first step toward implementing change (Senior, Swales, & Carnall, 2020). The rising temperature is placing the future of all known species at risk, and seeing the effects of the increasingly frequent tipping points, the time to act is now. Without a clear global public intent to reach it, the legitimacy of public action comes into question and affects citizens' intent and empowerment to do their part in striving for sustainability. Perhaps an increased level of clarity can turn sustainability away from being a buzzword and more in line with the intended definition as provided by the Brundtland report of 1987, namely *"development that meets the needs of the present without compromising the ability of future generations to meet their own needs"* (United Nations, 1987, p. 15).

1.2.1. Introducing Sweden and Norway

Sweden has a population of roughly 10.3 million citizens. The export predominantly consists of products and natural resources of the forest and mining industries, making up 47 percent of GDP in 2019. Productive forest land is 58 percent of the land surface, and farmland is 8 percent. The Swedish electric system is based on 39 percent hydropower, 39 percent nuclear power, 12 percent wind power, and 10 percent biofuels and fossil fuels. Its energy system relies on importing fossil fuels for the transport sector, while biofuels and electricity are used for the industrial, residential, and service sectors (Ministry of Climate and Enterprise, 2023).

Norway has a population of roughly 5.5 million citizens. The country's economy heavily relies on exporting fossil fuels and fish, with exports constituting about 46 percent of GDP. Farmland covers three percent of the land surface, and forests cover 38 percent. The nation's electricity is almost entirely based on renewable energy, mainly through hydropower. Its energy system relies on fossil fuels and biofuels for the transport sector and electricity and biofuels for the industrial, residential, and service sectors (Norwegian Ministry of Climate and Environment, 2022a).

Sweden and Norway have made significant commitments to address climate change (Hagen, Bach, & Jahn, 2022; Petridou, Sparf, Jochem, & Jahn, 2022). They have been deeply involved in defining and developing the concept of sustainability throughout history (United Nations, 1972, 1987), adopted the Paris Agreement and Agenda 2030, and set strict national goals compared to the international community. They have implemented policies and initiatives striving to achieve these goals, become carbon-neutral, and in the long term, carbon negative nation-states (Regeringskansliet, 2021; UNFCCC, 2020). As they are at the forefront of sustainability, examining their processes and investigating their measures to foster international sustainability is of utmost interest.

Considering the history of public environmental action, understanding sustainability and how we need to transition in awareness of its interconnectedness is nothing new (United Nations, 1972). History makes it clear that it is not certain that simply recognizing or stating the problem means that development is going in the right direction (Stockholm Environment Institute (SEI) & CEEW, 2022; United Nations, 1972). However, it does imply that the framework created by the UNFCCC is where the international communities put their hope in creating this collaboration, attempting to coordinate the tools and efforts to sequester the challenges of global climate change. As such, it is evident that the outcome of these reports will have a tremendous effect on the global climate and the global mindset and drive in interpreting our shared future. However, the wicked nature of the problem, together with the limitations of our cognitive capacity (Eklöf, 2017; Hinds, Patterson, & Pfeffer, 2001; Shannon et al., 2019), make it clear that the problems can be twisted and turned to fit various arguments while still being reasonable (Skirbekk, 2020). The problems are too big to handle rationally by individuals or groups, and in a global context, it is leading to global dangers of potentially good intentions.

1.3. Problem Topic

Achieving a globally coherent and transparent collaboration is essential in the face of our global challenges as the lack of it is in many ways the very source of our current problems. The UNFCCC comprises the main framework for combatting climate change. It outlines the need for concurrent action on all levels of global society in an international context. They guide the global community by appealing to global leaders in the private and public sectors while recognising the interconnectedness of economic, social, and environmental progress and asking countries to formulate national goals to combat the challenges. They also offer a reporting system where countries are asked to provide

information on their GHG emissions in National Inventory Reports (NIR), in which the estimation methods follow the Guidelines for National GHG Inventories published by the Intergovernmental Panel on Climate Change (IPCC). This information, the national vulnerability and adaptation to climate change, and their efforts to mitigate and adapt to climate change are then reported in more comprehensive reports called National Communications (NCs). The NC is vital for assessing parties' progress toward meeting their commitments under the Convention and sharing information and best practices among Parties.

However, this framework has an implementation gap between nations, as each nation may translate the guidelines into its own version of tangible and practical measures. Thus the limitation of the framework is its national perspective in a global world. Differences in the measurability of emissions and inconsistent reporting of information and methodology between nations mean that the transparency, coherency, and reliability of the reporting mechanisms must be improved. Furthermore, equity and fairness must be enhanced between nations, and there is a need to address the measures outlined in the latest UNFCCC reports of wealthier nations as it needs to be clarified if they promote ecocentric sustainability on a global scale or anthropocentric sustainability, meaning if they allow parties to prioritize national success while disregarding the potential risks to the planet. Balancing the global burden according to the level of resources each nation has is a complex challenge that must be addressed to overcome the threat of climate change. As different agendas and perspectives make it hard to reach a consensus and establish coherent action, finding common ground through diplomatic efforts and negotiation is essential. Analyzing the NCs through this lens can contribute to a more integrated understanding of sustainability on an international level and to the ongoing debate on effective strategies for achieving a sustainable future. That is why this thesis is looking at Sweden and Norway to address how they combat global climate change. What are they doing as sustainably prominent countries to balance the international scale?

1.4. Research Questions

How do the national approaches of Sweden and Norway combat climate change globally, and does their approach align with Ecocentrism or Anthropocentrism?

Subquestions:

- I. How do the international collaborations of Sweden and Norway align with Ecocentrism versus Anthropocentrism?
- II. How does the intended future of the respective countries' largest GDP-generating/GHG-emitting sectors align with Ecocentric versus Anthropocentric theory?
- III. How do the nation's policy measures against climate change align with Ecocentric versus Anthropocentric theory?

1.5. Delimitations

Climate change is a vast subject, so there are a few delimitations to consider to explain the focus of the research. First, it strives to understand the current event's alignment with ecocentrism and anthropocentrism by staying within the NCs of Sweden and Norway. It is not an economic comparison, therefore, sums and fiscal numbers are excluded. Neither does it attempt to explain and go into detail about all the institutes, initiatives, actions, contributions, or measures in various forms mentioned as it focuses on the NC itself. As such, it uses a reflexive heuristic interpretation of the theoretical and analytic framework to answer the research questions.

Table 1. The Anthropocentric and Ecocentric Perspectives

Anthropocentric	Ecocentric
Green Economy	Ecological Economics
Shallow Ecology	Deep Ecology
Weak Sustainability	Strong Sustainability

1.6. Research Design & Structure

The first chapter begins with an introduction and background on the importance of a coherent response from nation-states to global challenges. A brief insight into what documents are analysed is included before presenting the research question and with a brief motivation, and finally lands in formulating the intended research design.

Chapter two continues by explaining the methodology, ontology, epistemology, and hermeneutics of this thesis. It then introduces what documentary analysis is, how it is performed, its advantages and disadvantages, and how it is the methodology best suited to provide an in-depth analysis of the National Communications, including ethical considerations, bias, and processing. Subsequently, it describes the reflexive and systematic research approach and explains the analytic procedures, considerations, and decisions taken throughout this thesis to process the research questions.

The third chapter of this thesis contains the relevant theories capable of illuminating the research questions. Together, they form the anthropocentric and the ecocentric perspectives on sustainability in detail and use models to visualise them. First comes a brief walkthrough of Green Economy versus Ecological Economics before going into Shallow Ecology versus Deep Ecology, after which it rounds off with Weak Sustainability versus Strong Sustainability. This formulation of the theory as two sides of sustainability makes up the overarching Anthropocentric versus Ecocentric perspectives able to illuminate the viability of the national approaches when considering the international implications of their sustainable action.

Chapter four contains the summarised contents from analysing Sweden and Norway's National Communications (NCs). Much of the data collected from the reports was repetitive and used in various ways throughout the reports. As such, a part of the analysis connects these varied uses to see if their interpretation changes when the various ways to present data are combined. The data presented here strive to be highly informative about the contents while showing the interpretation of the data through the theoretical and analytic framework. Thus, it is structured to share the analysis in a descriptive manner and subsequently comment on it. The chapter is ordered according to the subquestions and rounds off with the main research question.

Chapter five contains the conclusions of the study. In its last section, it addresses the study's limitations and suggests areas for future research.

2. Methodological Approach

This chapter contains the ontology, epistemology, and hermeneutics used together with the methodological considerations and decisions taken throughout this thesis. Then, it introduces what documentary analysis is, how it is performed, its advantages and disadvantages, and how it is the methodology best suited to provide an in-depth analysis of the National Communications, including ethical considerations, bias, and processing. It explains why these documents were chosen and how a reflexive and systematic approach is used to process the research questions.

2.1. Ontology, Epistemology, and Hermeneutics

This section is meant to share the ontological and epistemological considerations taken in the context of the thesis and culminates in the hermeneutic considerations. As these are extensive concepts, they play a significant role in the fundamental perspective of the researcher and thus, in their understanding of the current paradigm as formulated by Kuhn (Sfetcu, 2011). Defining a paradigm is a task with no one answer, nor does this thesis strive to define one. However, several good definitions provide insight into what it is about. For example, Jacobsen (2019) describes a paradigm as “*Universally recognised scientific achievements that provide model problems and solutions to a community of practitioners?*” (Jakobsen, 2019, p. 8). Some of the implications that can be taken from this is that it highly depends on the context, background, and psychology of the person or people asked. The critical part here is that the way it is understood in the context of a thesis is fundamental. As such, it is essential to use a reflexive approach and provide insight into the ontological, epistemological, hermeneutical, and methodological considerations taken in the context of this thesis.

2.1.1. Ontological considerations

Denzin and Lincoln termed one of the most considerable obstacles in ontology as the relationship between the researcher and the subject of study (Denzin & Lincoln, 2011). However, this could also be a great way to understand ontology as it has to do with the researcher's involvement and impact on the process of knowledge production (Haynes, 2012). This thesis strives to understand the national approaches to a global vision of sustainability while communicating the researchers biased conviction that humans are an integral part of nature and not separate from it. It is part of this bias to investigate how and if there are inherent tensions between ecocentrism and anthropocentrism in the reports, as some aspects of society act in opposition to the human-before-nature perspective and instead strive toward progress through production and consumption (Jakobsen, 2021), not recognizing how simply growth by itself in its current form is no longer viable due to its environmental cost (Jackson, 2016). With this in mind, several other ontological considerations prove helpful in communicating the perspective of this thesis. First is holism, the ontological position that all things are interconnected

(Brennan & Lo, 2022). Then, critical realism as it states that reality exists independently of our perception and can be understood to varying degrees depending on methodological choice for empirical investigation. It acknowledges social constructivism in its conviction that our understanding of the world is influenced by social, historical, and cultural factors, such as language, power dynamics, and ideology, which create a context that colours our perspectives. The critical in critical realism comes from its determination to understand causation rather than being content with simply describing it (R. Bhaskar, 2014). It also values interdisciplinary, as reality is stratified, differentiated, and open-systemic. Finally, it understands empirical phenomena as the result of many simultaneous causal mechanisms (Roy Bhaskar, Naess, & Høyer, 2011).

What this means for the analysis of the NCs is the ontological conviction that the understanding of sustainability proclaimed within these documents are themselves interpretations of the “real” obtained through the human senses and thus, not an objective representation of reality. They are social constructs influenced by social, cultural, and historical structures. Therefore they deserve to be analysed using more context of these structures. As many social, cultural, and historical factors are hard to measure, the decision to extensively research the official historical background was made to help the analysis. It was a decision in line with the advantages of documentary analysis and the ontological conviction that the quality of the methodology is a decisive factor in obtaining empiric insights of high quality.

2.1.2. Epistemological considerations

Epistemological considerations refer to what constitutes acceptable knowledge in a particular discipline (Long, White, Friedman, & Brazeal, 2000b, p. 190). It is highly dependent on the researcher and the intended content. It could be understood as the researchers attempt to provide an interdependent insight into the composition of their personal biases, beliefs, and knowledge using academically accepted terminology.

The epistemological stance for this thesis includes constructivism which, in line with critical realism, highlights the importance of the situational context in understanding reality and its acceptance of the fallibility of our knowledge (Roy Bhaskar et al., 2011). An excellent reason for this is its ability to explain the many differences in opinion that can be found in the field of sustainable development. It can thus be used to explore the goals while recognising the interconnectedness that ultimately defines them.

Constructivism also acknowledges that the documents studied in this thesis are not objective representations of reality but social constructs representing the values, beliefs, and priorities of the ones who created the documents and are dependent on social structures to be interpreted and implemented (Roy Bhaskar et al., 2011; Tight, 2019). In addition, embracing critical rationalism

encourages the researcher to be critical and open-minded through falsification and continuous critique to improve (Tight, 2019).

2.1.3. Hermeneutic considerations

The purpose of hermeneutics could be introduced as a strive to understand human action and text. It is about interpreting the world through deriving conclusions from action and text (Seebohm, 2007).

Classical hermeneutics focus on understanding text from the author's perspective and the sociocultural context in which it was written. The classical interpretation of hermeneutics aims to find questions to which the text constitutes the answers (Prasad, 2002). More critical hermeneutics requires going beyond surface language to uncover buried meanings guided by theoretical perspectives. The critical approach to hermeneutics focuses on the power dynamics between those who interpret and those who are interpreted (ibid). Gadamer, Habermas, and Ricoeur, among others, developed the critical approach, which has been used in research on organizational and management practices (Prasad, 2002).

According to critical hermeneutics, the task of interpretation is to critique the ideological elements that legitimise and perpetuate the conditions responsible for systematically distorted communication. The purpose of critical interpretation is also to critique the technocratic and political consciousness, meaning when decision-making in governance is based on technical expertise and knowledge, or political bias when these fail to realize the negative consequences of system processes in our contemporary society (Prasad, 2002; Seebohm, 2007).

Using hermeneutics to analyse the reports offers many advantages as it seeks to understand the nuanced meanings embedded in the texts and thus makes it possible to argue whether the means align with ecocentrism or anthropocentrism. However, it does come with the difficult task of understanding the context to understand the parts of which it consists. In performing a hermeneutic interpretation of these texts, the interpreter must be receptive to the influence of cultural and historical traditions when interpreting texts, such as climate change, neoliberal ideals, deep and shallow ecology, and ecological economics. This means being aware of our historical and cultural traditions while recognizing that interpretation is a dialogue between the text and the interpreter. It means recognizing the role of prejudices in interpreting the text and allowing it to challenge preconceived ideas and beliefs. The limit of hermeneutic interpretation is the human factor, that it cannot guarantee any form of certainty and that it often relies on the biases and prejudices of the researcher (Prasad, 2002; Seebohm, 2007).

2.2. Documentary analysis

In this modern day and age, there is a need to define what a document actually is in the context of documentary analysis, as the understanding of it has changed over time, especially since the implementation of the internet.

According to Malcolm Tight (2019), a document was originally defined as a written text which has or can have a physical form (Tight, 2019), but that definition has been extended to include published and unpublished documents, written, oral or virtual documents, photographs, paintings and recorded material able to be analyzed quantitatively or qualitatively, and that comes from the public, private or virtual domains (Buckler, Dolowitz, & Sweeney, 2008; Fitzgerald, 2007, p. 281; Tight, 2019). It also includes official statistics, diaries, newspapers, and public records (Tight, 2019). McCulloch (2011) meant that a document can be understood as a record of an event, a process, or “something” without specifying the nature of the record (McCulloch, 2011, p. 249). Furthermore, documents can have varying status depending on the mandate it expresses and their role in society or the public sector (Tight, 2019).

With this in mind, what a document is defined as may vary significantly in terms of form, content, researcher's perspective, treatment, and how it is used in a wide range of disciplines. The common thread defining the variety in documentary research is that they are stagnant, already existing data in a textual or quantitative form that may or may not have been analyzed before. This also means that documentary research does not involve making new data, as it focuses on already existing data. Instead, it allows the researcher to explore the past to understand the present better. Finally, the method's purpose can be grasped to uncover the meaning and purpose of a document and its implications (Tight, 2019).

Another important aspect of documentary analysis is scale, as it can vary from small-scale studies that analyze a single document to large-scale studies analyzing thousands of documents. This implies that the document type, analysis, and research timeframe can vary, or be adapted, to suit a wide range of topics, from individual experiences to social or political issues. Adaptation demands careful planning and reflection from the researcher and an understanding of oneself and one's capacity. The general recommendation is to use multiple documents to provide the analysis with substance and reliable value (Tight, 2019).

With these insights, the documents of interest here qualify quite well. The reports are two representative documents of two nations, Sweden and Norway. They are updated to 2023, yet stagnant in their published form, allowing for a relevant in-depth analysis to answer the research questions.

2.2.1. Advantages of Documentary Analysis

The first advantage of documentary analysis is accessibility. As the research has progressed, relevant documents, reports, and publications have been available for consideration and study online or publicly via research websites accessible through the Universities or Governmental archives. As the underlying data is continuously well documented, it is thus easy to reexamine.

The second advantage, and where it shines compared to other methodologies, is the strength to analyze longitudinal data collections and compare their development over time. While this study is of current

events, this aspect would allow for future research into how the concept of sustainability has changed over time, incorporating more related information and seeing key issues, conflicts, and needs in different lights as it progress. For this thesis, parts of the history of sustainability as an official concept have been used reflexively to strengthen the analysis and understanding of current events.

The third reason why documentary analysis is chosen is due to its reliability as well as validity. The underlying documents are produced by reputable organizations and experts, making them objectively accurate, detailed, and highly reliable sources of information. Thus, they make two documents worth scrutinizing using the research questions to develop the answers.

Forth, the area of sustainability is vast, and it can prove challenging to gain a comprehensive analysis of the field using empirical methodologies. As documentary analysis aims to analyze and categorize static text at scale, the method can provide some of the most detailed insights into the international and national efforts to develop a sustainable society. In this case, the documents are written by national representatives using official data produced using various and highly reliable methods and with great accessibility to necessary resources, making them very suitable for studying such a wide field of research.

Together these are the reasons that have made it possible to write this thesis, as it has taken time to research all the information that goes into it.

2.2.2. Challenges and Biases in Documentary Analysis

While documentary analysis does not guarantee a lower degree of implicit or explicit bias than other methodologies, it provides a few advantages. Firstly, it is a highly objective choice as the documents analyzed are stagnant. This also means that it has the potential to be highly transparent as the information gathered and presented in the analysis allows for critical analysis and scrutiny, as well as indicating that documentary analysis is highly replicable as the same documents can be analysed again by other researchers. Second, it can be highly reliable if produced using highly objective sources as they are published by dedicated institutes. Third, the information can also be thoroughly and systematically analysed compared to other qualitative methods as it provides the researcher with an increased level of control of the data involved.

The bias involved is thus limited to the choice of documents and the interpretation of their contents. However, this is not to be underestimated, as inherent bias is the greatest challenge in documentary analysis (Tight, 2019). To counter this, a wide range of documents have been studied to give the researcher a broader understanding of the field before starting the analysis to make it manageable and understandable. This process entailed researching the academic interpretation of sustainability from various perspectives. These were used to formulate two overarching ones where a broad range of academic theories could be placed. In addition, the process entailed studying the historical background of the sustainability concept and its report structures to understand which reports best represent a

national perspective. The NCs were the clear choice for several reasons. The main one is that by investigating the inherent bias in these reports and comparing them, the national bias in each country can be better understood using the research question.

2.2.3. Weaknesses in documentary analysis

Addressing the weaknesses of documentary analysis compared to other methodologies, the list is quite comprehensive. First, it is not suited for empirical research as it does not actively create the data in other ways than through interpretation. While this is advantageous in dwelling deeper into the subject as it allows for multiple interpretations and perspectives on the same set of documents, other research methods, such as experiments or surveys, may be more structured and less open to alternative interpretations (Fitzgerald, 2007). It may also be less suitable for exploring current or ongoing phenomena, requiring more real-time data collection methods that have yet to be documented. Furthermore, documentary analysis's validity and reliability can be difficult to establish as documents can be incomplete, and their authenticity may be difficult to verify (Tight, 2019). Other research methods, such as experiments or surveys, may be more rigorous in establishing validity and reliability. Also, as it is a highly qualitative methodology and lacks quantitative measurability, it cannot use numerical data and make statistical analyses to test different hypotheses (Long, White, Friedman, & Brazeal, 2000a). There is also the consideration of the psychological aspect in the diverse experiences of gathering data directly from other people, groups of natural phenomena, or stimuli. Finally, the data collection process can significantly influence and help pinpoint the focus areas with the insights from being in the field. While that may be biased by itself, it is a vital aid seeing as the cognitive ability of the researcher may be strained from the intense use of focused attention on one form of data.

Furthermore, there are considerable methodological difficulties in calculating the effect of policies and measures through documents, as the methodology is limited to the data already interpreted. This results in a bias according to the report's intent and could only be countered by comparing it with other data using triangulation, mixed methods, or related documents interpreting the same data. This also points to the weakness of the bias in the documents and the framework they are part of, as the same data presented would need to be audited by other independent actors to strengthen their validity. There is also uncertainty related to such estimates as the purpose and the intended reader may significantly influence the interpretation. Nevertheless, effects are estimated for many policies and measures, so taking this approach and others in academic research is essential. In this line of reasoning, triangulation or mixed methods are superior as they can combine the strengths and weaknesses of documentary analysis with the strengths and weaknesses of other qualitative and quantitative methods, which could ensure a more resilient result.

2.2.4. Ethical Considerations in Documentary Analysis

Navigating through the ethical considerations of documentary analysis may differ from other methodologies in some regards. However, guidelines are still available to help find the true north in the method.

According to the British Educational Research Association (BERA), the guidelines consider the document's authenticity, credibility, representativeness, and meaning. The sensitivity of the data, who created and owned or owns it, the intended uses, and whom it was created for. How it is intended to be used in the research, and if it is ethical to use the document. In addition, researchers should consider how and whether the content of those involved should be sought or if they should be informed of its intended use. Of course, the guidelines also apply informed consent, anonymity, transparency, the right to withdraw, and copyright. Furthermore, it is advised that at least one document representing each factor involved in the research project is adequately represented. Also, to take a comparative approach to avoid analyzing documents in isolation. Lastly, to be transparent about how and why the documents were chosen to ensure replicability, reliability, and validity (British Educational Research Association (BERA), 2018).

The official capacity of the documents used in this thesis means that they do not contain any personal information that could violate the privacy of individuals. As such, no informed consent from individuals is needed. The public accessibility of the documents also ensures there is no sensitive or confidential information involved regarding collecting, storing, or processing the data involved, nor does any information disclosed transgress any intellectual property rights. Instead, the official capacity of the documents provides ethical strength through reliability and validity to the study as its transparent nature naturally combats corruption through alternative funding or support that may influence the data. Choosing two reports and comparing them allow for a systematic and reflexive approach as insights gained in one report can be used for context, reflection, and insights in the other report and vice versa. Lastly, in the spirit of transparency, the thesis has strived to maintain a high level of it when choosing and presenting sources, methodology, and biases to provide the reader with sufficient detail to understand the perspective, analysis, and conclusions drawn, with hopes of inducing further reflection and stimulating discourse.

2.3. Data Selection

In the context of these considerations, documentary analysis is a methodology well suited for the complex challenge of undertaking an analysis regarding the understanding of global sustainability in public practice. The documents of interest are chosen after carefully considering the source and their official capacity. Much of the data gathered is from primary sources straight from the website of the official source. They are public documents reported to the UNFCCC by the Swedish and Norwegian

governments, the international community of the UN, and its many institutes serving under it. For example, many have been searched for by name regarding the sustainability background.

Acquiring the academic material has involved direct communication with several teachers, researchers, associate professors, and professors at Åbo Academy, Nord University, and Gothenburg University, who have offered insights and recommendations or valuable documents and data. Yet the main part of the material used has been researched through access to internet sources provided by the three Universities, such as their respective online library, the various journals they are subscribed to, and the search engines Google, Ecosia, and Google Scholar. Finding these resources and choosing from the vast literature available in the fields of Public Administration, Public Science, Social Science, Global Management, and Sustainable Development has been significantly influenced by the classes studied throughout this master's programme. This has led to specific authors and years being searched for and used through online resources and documents already available to the researcher in physical or digital form from several classes throughout the programme. When new or unknown sources have been considered, the relevance of the research subject, as well as the number of citations, has been a factor in prioritising some documents compared to others.

Language has restricted the sources to ones written in English, Norwegian, or Swedish, and has been translated to English by the researcher and noted as a translation within the text whenever an interpretation or quote has been used.

2.3.1. The Primary Sources of this thesis

There were several reports that seemed as viable options to be analysed in this thesis during the research process. First, the Nationally Determined Contributions (NDCs) under the Paris Agreement were of interest. However, as they are only released every five years (while they can be updated at any time), the NDC from Sweden was released in 2020, and the Norwegian one in 2022, making the Swedish data less updated. This would mean that the Swedish information was less representative of the national efforts than the Norwegian, which could be problematic if striving for a fair assessment. Environmental, social, and economic conditions and challenges may have also changed, requiring different approaches and solutions.

Biennial Reports also provide progress made in the same spirit as the NDCs, but as the name implies, do so every two years. The Swedish one was published in 2023, and the Norwegian one in 2022, making them appear great candidates. However, their purpose is to provide more updated information regarding GHG emissions and mitigation measures in more minor reports. They are also quite focused on sequestration and, thus, not as comprehensive as needed for this analysis.

Following these, the Voluntary National Reviews (VNRs) under the Agenda 2030 were considered. They were very absorbing as they take an approach to sustainability from the 17 SDGs. Thus, they are way more comprehensive as they have a more interconnected understanding of sustainability. However,

both nations' VNRs were released in 2021. Considering everything that has happened since, for example, the impact of COVID-19 and the Ukraine war, it is already outdated in line with some of the earlier considerations.

Continuing the research, the National Communications (NCs) were considered. They were released from the two nations of interest in late 2022 and early 2023, meaning they were very much updated. In grappling with climate change's effects on the national and international levels, it is essential to have the most recent data and information available. These NCs were the most updated and also the most comprehensive choice, increasing the possibility of making informed decisions and developing practical conclusions.

Considering the research question and in the interest of delving as deeply as possible into sustainability from a holistic perspective, NCs continuously appeared as the better choice to study as case studies as they provided a more holistic understanding of a country's approach to environmental sustainability. The purpose of the NCs is to report information regarding strategies, policies and means in measures mitigating and adapting to the impacts of climate change, including financial and technological support provided to developing countries (NCSP, 2008). This information is essential for analysing a country's level of commitment to sustainable development in a global context and critical for achieving a coordinated international effort to mitigate and adapt to climate change.

In light of this, the sources to be analysed are the Swedish and Norwegian Eighth National Communications on Climate Change (NCs) under the UNFCCC. The Swedish NC was released in early 2023 (Ministry of Climate and Enterprise, 2023), and the Norwegian NC in December 2022 (Norwegian Ministry of Climate and Environment, 2022), and are, as such, the most recent ones. These two reports provide relevant information on climate change efforts in both countries, such as their climate policies, GHG emissions, reduction targets, mitigation actions, and projections toward their environmental and sustainability goals. As such, they are essential for evaluating the countries' alignment with the global goals of the Paris Agreement and Agenda 2030, as well as the anthropocentric and ecocentric alignment reflected in their efforts.

“These national communications have become not only one of the central features of the [United Nations] Convention [on Climate Change (UNFCCC)] process and of the active involvement of these Parties therein, but also one of the most important tools for bringing climate change concerns to the attention of policy makers at the national level. As we enter a phase of the Convention process in which the focus is increasingly on implementation, national communications are bound to become even more important. In this new phase, national communications will not only continue to be the main reporting instrument of the Convention but will also be an important strategic tool to help countries align their interests and priorities to the overall goals of the Convention. National communications will continue to be the principal instruments for highlighting and disseminating climate change concerns to a wider national audience. As such, they will continue to serve as an educational tool and an information resource to the COP and other international, multilateral and bilateral processes.”

2.4. Research approach, interpretation, and processing

2.4.1. Reflexivity

The documentary analysis has taken a reflexive approach as it has been suitable to find and reflect upon potential biases and fallacies that may influence the researcher and the researched documents throughout the process.

Reflexivity involves thinking about how our thinking came to be and how it is constantly revised and compared in light of new knowledge. To use this effectively in the analysis, the reports were read, and all information related to each area of interest was successively extracted into a separate electronic document to envision it in its reported totality. The revision has then continuously affected the research, refining it as it progresses, as Haynes (2012) recommended. This is reflected in the second revision as the three emerging areas of interest, collaboration, emissions, and policy, were identified. From this, related keywords were reflected upon and then searched for in the NCs, for example, oil, resulting in findings on 105 pages in the Norwegian NC, allowing for a more comprehensive extraction of data regarding emissions. Thus, reflexivity has allowed embracing knowledge and input from the senses through text and social circumstances related to the study, such as discourse with interested parties and internal reflection. It is also reflected in the slightly anarchistic approach as the topic questions the public leadership on international and national levels about the capability to handle the wicked problem of global sustainability, but does so as it strives to reach conclusions that can benefit future society (Feyerabend, 2010; Jackson, 2016; Jakobsen, 2019).

The process in the thesis acknowledges and incorporates the researcher's subjectivity, values, and biases proclaiming that it would be irresponsible to stand behind any methodology that states true objectivity. Instead, the critical ability of qualitative research to reflect on the research process and recognize the complexities involved can enhance the level of transparency, rigor, validity, and reliability. By doing so, the research process is set free in a structured manner to delve deeper into understanding the phenomena placed under the lens (Alvesson & Sköldberg, 2018).

Alvesson and Sköldberg (2018) further state that the reflexive approach contains five key aspects. The first is self-awareness, as researchers should be conscious of their values, beliefs, attitudes, and biases so that they may provide insight into how these may influence their interpretation, process, and conclusions. It is also to help them minimise strong biases and enhance the possibility of future replicability. Second, the reflexive approach involves a critical examination of the research methodology and techniques used, such as it can reveal limitations and biases resulting from the methodology itself. This is crucial as it may help reveal vital aspects outside the methodology or whether additional methodology should be incorporated to increase reliability, validity, and viability. The third aspect is

epistemological reflexivity, going deeper into the personal biases and understanding of the concepts and knowledge involved in the process to recognise how these can influence the data collection, research questions, analysis, and interpretation. This is also a step involved in personal growth, as gaining a perspective able to put the self under scrutiny may help develop empathy, openness, awareness, personal needs, and values to a higher degree. The fourth key aspect is positionality, which shares a great deal with earlier steps but focuses more on social, political, and cultural contexts. This thesis interpreted this as considering the power bases of legitimacy, reward, expert, referent, coercive and informational power (Forsyth, 2019; Raven, 1993). From this, the internal reflection has considered how society's power structures influence the researcher and the data involved. Finally, the fifth step entails ethics and transparency. The researcher should be open and honest about the process itself, the work, decisions, and the dilemmas they face along the way. The fifth step is essential as it has the potential to increase credibility and trust the most, thus leading to better dialogue, communication, understanding, and progress (Alvesson & Sköldbberg, 2018).

2.4.2. Systematic approach

As the reflexive approach provided insight into how the researcher treated the research process, the working progress of the documentary analysis used a systematic, step-by-step approach that analyzed the process in a comprehensive and structured way (Papaioannou, Sutton, & Booth, 2016). This approach also entailed a case study design, which can be described as an intensive study about a person, a group of people, a unit, or a document (Flyvbjerg, 2011; Roberta & Alison, 2018). Such an intensive study aims to examine in-depth data relating to several variables, which can be used to develop general knowledge across similar units or documents (*ibid*). Using several cases allows more reliable and in-depth knowledge, and its method follows the same steps described below. These steps were intended to identify patterns, trends, and themes in the documents which could be used to develop and answer the research questions. Using it in this thesis offered structure to reflexivity, and in combination, the approach enabled the research to gain a stronger foothold.

The first step involved defining the research objective and thinking about the first version of the research question(s), in which it used search engines, academic databases, and social networks in conducting an initial search of literature relating to the research topic. It also entailed researching the historical context of sustainability to see examples of how sustainability has been used and defined from its argued initiation around 1972, until 2023, using eleven official reports. Thereafter, details regarding the report systems currently in use and how these were performed were researched. The eleven historical reports have all played critical roles in developing the international environmental agenda. This was done using the UNFCCC website search function to find the reports in their original form and reinforce their chronological order. It followed by researching academic work that shared its view on how the reports relate to each other, their respective report systems, and what they contributed. Finally, this context made it evident which two national reports were best suited to be

studied as case studies able to provide answers to the research questions, namely the Swedish and Norwegian NCs.

It was closely followed by the second step, developing a suitable search strategy for the relevant data within the reports. This step started with adopting emerging content analysis, a research tool used to determine the presence of certain words, themes, or contents within a text (Funck & Karlsson, 2021) and reading the full reports while reflexively developing a combination of keywords resulting in three emerging themes, international collaboration, emissions with economic interests, and policy, each crucial for the research question and able to be categorized according to the two differing theoretical views on sustainability, the anthropocentric perspective consisting of green economy, shallow ecology, and weak sustainability, and the other termed the ecocentric perspective consisting of ecological economy, deep ecology, and strong sustainability. These three emerging themes were transformed into subquestions as answering them could make a strong case for answering the main research question.

The third step of establishing inclusion and exclusion criteria was activated as the insight formed. The first inclusion or exclusion criterion in this stage was that the collected data was relevant to the main question, and the second criterion was that it was related to one or several of the three formulated subquestions.

Thus, the process continued with step four, screening and selecting data from the documents, which entailed investigating the contents again, extracting the data relating to the research in a separate document, and subsequently categorizing it according to the specific questions to be studied further. It also entailed reviewing the NCs a third time using a keyword search relating to the three subquestions. All used keywords are available in the table named Analytic Keywords. For example, the word “*policy*” was used to find the information relating to subquestion 3, resulting in findings on 133 pages in the Norwegian NC and 106 pages in the Swedish NC. The contents in these categories were extracted into a comprehensive document, one for each keyword on which the analysis could be performed.

Step six entailed reformulating, analysing, and synthesizing the data according to the research question. This was done by studying the gathered data in each keyword document and summarising the contents in a formulated way. The research questions were used as a decisive framework and a final inclusion or exclusion criteria in this stage. These were systematically reviewed, and relevant information was extracted into the analysis in the working document. Only data that the research questions could be applied to conclude the data from the reports were included. Thus, the data is put in relation to the two perspectives, ecocentrism and anthropocentrism, along with the reflexive interpretation of the researcher. As the findings emerged, the discourse was formulated as reflections about the content were continuously noted as the synthesizes bore on. The analysis and discourse are presented in chapter four, dealing with one subquestion at a time. This process answers the main question before the concluding remarks and the study's limitations.

Table 2. Analytic Keywords

Research Questions:	Keywords:
<p>I. How do the international collaborations of Sweden and Norway align with Ecocentrism versus Anthropocentrism?</p>	<p><i>collaboration (Norway 26 pages, Sweden 44 pages)</i> <i>international (Norway 109 pages, Sweden, 113 pages)</i> <i>aid (Norway 21 pages, Sweden 16 pages)</i> <i>contribution (Norway 76 pages, Sweden 27 pages)</i> <i>measures (Norway 143 pages, Sweden 96 pages)</i></p>
<p>I. How does the intended future of the respective countries' largest GDP-generating/GHG-emitting sectors align with Ecocentric versus Anthropocentric theory?</p>	<p><i>oil (Norway, 105 pages)</i> <i>petroleum (Norway, 54 pages)</i> <i>energy (Norway 175 pages, Sweden 211 pages)</i> <i>fishing (Norway 41 pages)</i> <i>industry (Norway 99 pages, Sweden, 88 pages)</i> <i>mining (Sweden, 9 pages)</i> <i>forest (Norway 103 pages, Sweden 110 pages)</i> <i>export (Norway, 13 pages, Sweden, 18 pages)</i> <i>military (Norway 1 page, Sweden 0 pages)</i></p>
<p>I. How do the nation's policy measures against climate change align with Ecocentric versus Anthropocentric theory?</p>	<p><i>policy (Norway 133 pages, Sweden 106 pages)</i> <i>measures (Norway 143 pages, Sweden 96 pages)</i></p>

3. Theoretical framework

The third chapter of this thesis contains the relevant theories capable of illuminating the research questions. Together, they form the anthropocentric and the ecocentric perspectives on sustainability in detail and use models to visualise them. First comes a brief walkthrough of Green Economy versus Ecological Economics before going into Shallow Ecology versus Deep Ecology, after which it rounds off with Weak Sustainability versus Strong Sustainability. This formulation of the theory as two sides of sustainability makes up the overarching Anthropocentric versus Ecocentric perspectives able to illuminate the viability of the national approaches when considering the international implications of their sustainable action.

3.1. The Ecocentric and Anthropocentric perspectives on Sustainability

Understanding how the concept of sustainability is used is central to this research. The general understanding is that it nowadays holds an immense interconnectedness which results in it losing its edge and thus can be manipulated to fit both sustainable and unsustainable actions (European Commission, 2023; Skirbekk, 2020). As the model below indicates, resources may continue to be drained in the name of improving sustainable practices, but it does not get away from the fact that it is still draining our resources. Thus, the interconnectedness in sustainability is both an evolutionary insight resulting from the information revolution of technology and a grave danger as it allows excellent arguments or excuses for nations to work toward sustainability in very differing ways (Skirbekk, 2020). It is possible that a general understanding of sustainability as a concept can lead to good intentions underestimating what can be done in a certain timespan, resulting in suboptimal prioritization when dealing with global challenges. To communicate these arguments, this section is dedicated to refining the concept of sustainability and explaining how it can be used differently depending on the context.

As implied by the model, the problems revolving around environmental protection and sustainability are deeply rooted in the economic structures that dominate global society. As a result, we face severe threats from exceeding the biophysical limits of our planet in pursuit of economic gain resulting in excess nutrient loading, loss of biodiversity, decrease, ocean acidification, segregation, migration, and global warming (Jackson, 2016).

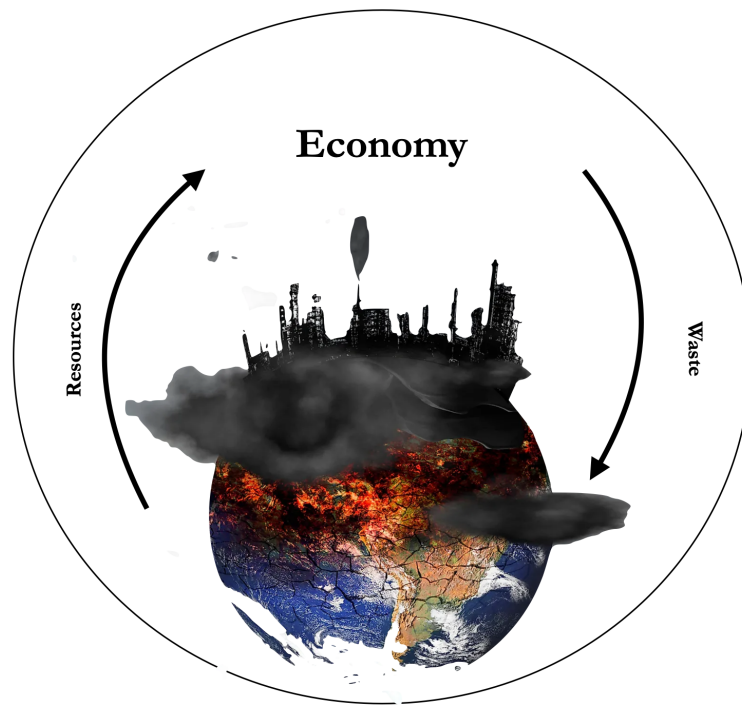


Figure 1: Draining resources as sustainability practices improve.

3.1.1. Green Economy and Ecological Economics

The difference between green economy and ecological economics shows more of the global dangers of good intent. Green economy moves within the limitations of political and anthropocentric frames. As such, it is forced to settle for subpar environmental action when political, economic, or social agendas interfere. Ecological economics is based on a different understanding of how the world works, namely that the intricacies of current society are first and foremost fundamentally dependent on our global ecosystem, and thus that we need to step out of current societal structures to formulate one that accurately represents this fundamental, organic and more holistic understanding (Jackson, 2016; O Jakobsen & V Storsletten, 2018). It aligns with Richard Welford's environmental management ideas as it emphasises the integration of environmental and social considerations into business strategy and operations (Welford & Gouldson, 1993). Ecological economics recognizes that economic activities impact the environment and thus seeks to reduce or eliminate those impacts. It also recognizes that economic activities depend on natural resources and ecosystem services and seeks to ensure their protection and conservation (Jackson, 2016). It seeks to balance economic, environmental, and social objectives to ensure a sustainable economy and society. In doing so, it is a fundamentally different perspective where actors must obtain a level of understanding with a more profound acceptance of the global world as an ecosystem that humans are a part of, as opposed to the perspective of a human world in which the ecosystem is but a part.

In practice, the difference can be observed in the good intent behind green economics as it is consistently used to put out ever-emerging economic, social, and political fires that arise within the current paradigm of societal structures. Its goal is to preserve and protect the current ways by reducing the negative impact of neoliberalism, and it is making a difference compared to “business as usual” as it is spreading awareness of general sustainability with its interconnected applications. Moreover, because of the general understanding green economy has of sustainability, it can be used to create a competitive edge for products produced within the nowadays more traditional neoliberal structures.

On the other hand, ecological economics strives to incorporate the principles of scale, distribution, efficiency, the precautionary principle, recognition of ecological services, an interdisciplinary approach, and adaptive management (Costanza, 2014; Daly & Farley, 2011). These principles aim to promote a more sustainable, equitable, and efficient use of resources, recognising the interdependence of human economies and the natural environment. According to these principles, sustainable development means living within the environmental constraints of absorptive and regenerative capacities (Costanza, 2014, p. 182).

3.1.1.1. The Principles of ecological economics

Scale can be understood as scaling economic activities within the natural limitations of our ecosystem. Distribution as the need for equitable distribution of resources within and between generations. Efficiency advocates efficient allocation and use of resources to avoid waste, pollution, and depletion of natural resources of ecosystem services. The precautionary principle highlights the risk of uncertainty, especially regarding the complexity of our global ecosystem, the dangers of irreversible harm, and the fact that scientific evidence is non-conclusive. This principle plays a significant part in understanding how the action taken from a more anthropocentric standpoint filled with good intentions may result in global demise as our global society has reached the level of development that is able to change the climate surrounding us. Not recognizing this insight enough or acting towards a fundamental change in the way governance works in practice is part of the root of our wicked climate change problems. The following principle, recognising ecological services, means recognising the fundamental importance of services provided by the ecosystem, such as pollination, climate regulation, and nutrient cycling, in decision-making processes on all levels of society to ensure sustainable management. The interdisciplinary approach translates to collaboration and the importance of considering as many disciplines as possible when attempting to understand the impact of our actions, especially in the context of economy and ecology. Finally, adaptive management entails flexibility and agility, as new information and changing contexts are unavoidable and need to be accepted not to be devastating to our future.

3.1.2. Shallow and Deep Ecology

The next lens through which this difference can be observed is the theory of deep and shallow ecology by Arne Næss. In this theoretical perspective, shallow ecology equals climate action against pollution and resource depletion and is, as such, anthropocentric action as it strives to improve our living conditions. As valid as such a mission may be, it is based on a human-in-environment image that sees the human way of life as separate from the environment. It does not consider enough information or data from the ecosystem when taking action. Deep ecology is instead centred around an understanding that humans are a product of our global ecosystem and highlights the principles of diversity and symbiosis between the human and ecological way of life (Næss, 2005). The difference can also be observed in the understanding that deep ecology supports the idea that humans are responsible for protecting and preserving the environment. In contrast, shallow ecology focuses on human control and exploitation of resources (Næss, 1995).

The ontological position of Arne Næss and his Ecological Self argues that the Self spelled with a capital S is not just an entity but a part of a larger ecological system, and as such, there is an interdependent interconnectedness between all beings and nature. The distinction between the self spelled with small s and the Self is important. According to Næss, the self is the individual's ego expressed outwards to the world. It is instrumental and driven by material gain, power, and control. The Self is our inner core, our being, as such, it is who we really are, our true identity, and the representative of our innate value and potential. It is capable of unconditional love, compassion, and acceptance for ourselves and others. It is our spiritual connection to the world and the power to manifest our potential (Næss, 1995). As such, he argues for a radical shift in our lifestyle, reflecting a balanced relationship between humans and nature (Næss, 1995). One such shift could be the ontological position that recognises the intrinsic value of nature and the strength and inspiration found in natural ecological processes, relationships, and ecosystems (Norton, 2000).

In the context of the reports, the differences between instrumentalism and innate value are vital. Instrumentalism is the belief that the value of something is determined by its usefulness or ability to serve a purpose, in line with the reasoning of shallow ecology. Intrinsic value is in opposition to instrumentalism, the belief that something has an inherent value regardless of any practical or utilitarian purpose (Næss, 1995), in line with the thinking of deep ecology. Instrumentalism has often been the basis for decisions about using public resources and can lead to short-term thinking and decisions that overlook long-term consequences (Stockholm Environment Institute (SEI) & CEEW, 2022). On the other hand, intrinsic value recognizes that nature has an inherent worth and that decisions should be made with this in mind. Both instrumentalism and innate value have their place in decision-making. Still, it is essential to recognise the differences between them and take both into account when making decisions relating to the global climate.

3.1.3. Weak and Strong Sustainability

The next contribution to understanding the two perspectives is weak and strong sustainability. Weak sustainability is another concept suggesting that promoting economic growth and development is the best way to ensure the long-term sustainability of natural resources. This concept suggests that economic growth should not be limited to the use of renewable resources but rather that the use of some non-renewable resources can be justified if it helps to promote economic development and ultimately improve the quality of life for people. It is based on the idea that non-renewable resources can be replaced by substituting renewable resources or by using technology to increase the efficiency of their use (Zadek, Forstater, & Naidoo, 2012). It aligns with neoliberal reasoning, the measurability and thinking of NPM, and shallow ecology with the self spelled with a small s.

Strong sustainability is in opposition to weak sustainability a concept that emphasises the need to maintain the existing natural capital resources, such as minerals, forests, and clean air, over time. It is based on the idea that natural capital is a finite resource and that its depletion can be detrimental to the environment and human society (ibid). This concept recognises the difference between natural and humanly created natural development, for example, that bio-diversity is still beyond our understanding and thus cannot be replaced after local ecosystems have been torn down. It aligns with the reasoning of Ecological Economics, Deep Ecology, and Innate value.

3.1.4. Theoretical Summary

Analysing the NCs of Sweden and Norway using the concepts of Green Economy, Ecological Economics, Shallow Ecology, Deep Ecology, Weak Sustainability, and Strong Sustainability allows for a comprehensive analysis of the countries' international sustainable development policies, strategies, and progress. These concepts are the basis for assessing the credibility and variation in how each country prioritises anthropocentric and ecocentric means in its international agenda. Categorizing these concepts as two perspectives enables the research to place the theory in a practical framework to analyse these documents. The first one follows the anthropocentric ways of the growth-oriented green ecology, shallow ecology, instrumental value, and weak sustainability. The other follows the ecocentric ways of ecological economics, deep ecology, innate value, and strong sustainability, prioritising well-being, social and environmental justice, and ecological sustainability. The contents of ecocentrism do not allow national borders to be the limiting factors, as ecocentric action is global. However, anthropocentric action allows for national prioritization, and anthropocentric international action. The frame for the analysis below describes how the perspectives are used in more detail, and the models visualise these perspectives.

3.1.5. Frame for Analysis

Coding the data according to the two perspectives is based on content analysis. As described, the contents related to each research question were extracted by reading the text and searching for keywords. In the following analysis, the contents were coded according to if the initiative in focus had an ecocentric or anthropocentric outcome or expected outcome. An anthropocentric action was identified by its alignment with green ecology (*social, political, or economic agenda prioritized above environmental action*), Shallow ecology (*exploitation, instrumentalism*), or Weak sustainability (*Promoting economic growth, justifying using non-renewable resources, humans before nature*). An ecocentric action was identified by its alignment with the principles of ecological economics (*scale, distribution, efficiency, the precautionary principle, recognition of ecological services, an interdisciplinary approach, and adaptive management*), Deep ecology (*inherent value, diversity, symbiosis, responsibility, preserving, spirituality*), and Strong sustainability (*maintain natural capital, depletion of natural resources are detrimental*). In practice, this does not mean that these explicit terms must exist within the reports but that the contents can be interpreted as more or less aligned with them. As such, the difference is identified using hermeneutics, ontology, and epistemology.

Considering the Swedish and Norwegian contexts, these countries are known for their strong commitment to environmental protection and sustainable development (Hagen et al., 2022; Petridou et al., 2022). By using Green Economy and Ecological Economics in discussing the international implication of their actions, it becomes possible to evaluate the effectiveness of their approaches in balancing economic growth with environmental preservation in a global context.

Using the concepts of Shallow Ecology and Deep Ecology can partly reveal the extent to which these countries' reports recognise the intrinsic value of ecosystems and promote conservation and resource management.

Assessing the reports using the ideas of Weak and Strong Sustainability help determine if the countries appear to prioritise the preservation of natural resources and capital or accept substituting or replacing the natural resources with humanly created ones leading to more economic growth.

While the purpose of the NCs is to communicate the national environmental work, the feasibility, plausibility, and credibility of the international means presented in each report must be addressed. Together with their inclusion of diverse stakeholders, data transparency, and evidence of progress, this will provide insight into how both reports recognise the global context of sustainability efforts, the interconnectedness of global challenges, and the need for international cooperation. It will provide insight into their awareness and display of the global implications of their actions. It can indicate what more countries should focus on and what is needed to reach beyond recognizing our responsibility within national borders. As such, the NCs can be used to create the collaborative vision of sustainability we need.

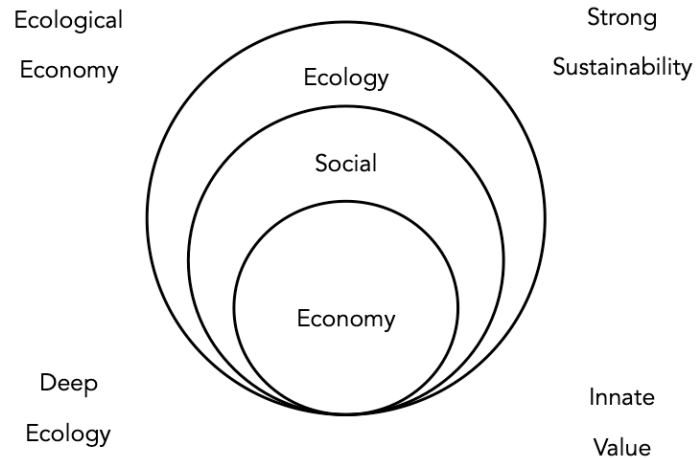
By addressing these aspects, we can analyze Sweden and Norway's national approaches to international implications and means towards sustainability in their latest reports, gaining a deeper understanding of the complex interplay between anthropocentric and ecocentric factors in considering the international implications, as well as the strengths and weaknesses of each country's global sustainability efforts.

In conclusion, applying these concepts to the analysis of the reports from Sweden and Norway allows for a multidimensional understanding of their sustainable development strategies and progress, shedding light on what they believe will help create global sustainability as well as potential improvements suitable for future research.

Table 3. Alignment parameters of anthropocentric and ecocentric actions.

Anthropocentric	Ecocentric
<p style="text-align: center;">Green Economy</p> <p style="text-align: center;"><i>Social, political, or economic agenda prioritized above environmental action</i></p>	<p style="text-align: center;">Ecological Economics</p> <p style="text-align: center;"><i>Scale, distribution, efficiency, the precautionary principle, recognition of ecological services, an interdisciplinary approach, and adaptive management</i></p>
<p style="text-align: center;">Shallow Ecology</p> <p style="text-align: center;"><i>Exploitation</i></p> <p style="text-align: center;"><i>Instrumentalism</i></p>	<p style="text-align: center;">Deep Ecology</p> <p style="text-align: center;"><i>Inherent value, diversity, symbiosis, responsibility, preserving, spirituality</i></p>
<p style="text-align: center;">Weak Sustainability</p> <p style="text-align: center;"><i>Promoting economic growth, justifying using non-renewable resources, humans before nature</i></p>	<p style="text-align: center;">Strong Sustainability</p> <p style="text-align: center;"><i>Maintain natural capital, depletion of natural resources are detrimental</i></p>

Ecocentric



Anthropocentric

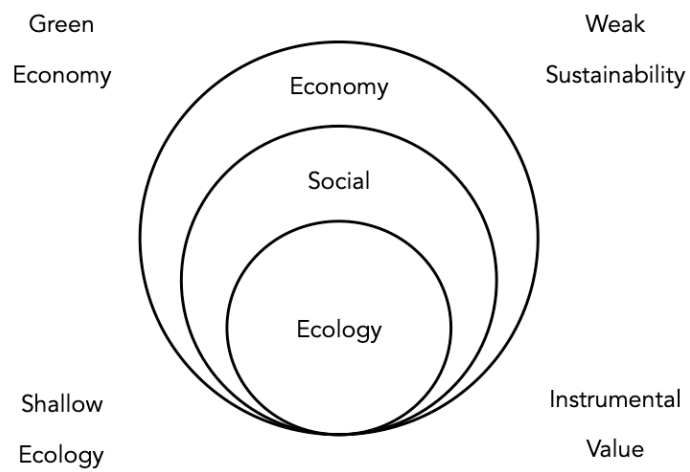


Figure 2. Models showing the Ecocentric and Anthropocentric theoretical frameworks.

4. Analyzing the National Communications (NCs)

Chapter four contains the summarised contents from analysing Sweden and Norway's National Communications (NCs). Much of the data collected from the reports was repetitive and used in various ways throughout the reports. As such, a part of the analysis connects these varied uses to see if their interpretation changes when the various ways to present data are combined. The data presented here strive to be highly informative about the contents while showing the interpretation of the data through the theoretic framework. Thus, it is structured to share the analysis descriptively and subsequently comment on it. The chapter is ordered according to the subquestions and rounds off with the main research question.

4.1. How do the international collaborations of Sweden and Norway align with Ecocentrism versus Anthropocentrism?

4.1.1. Swedish Collaboration

The country employs an approach involving extensive participation in international organizations, research activities, and collaborations.

“Developing relationships with strategic countries is positive for tackling environmental challenges but also in terms of industry, export trade, foreign policy and security policy.”

(Ministry of Climate and Enterprise, 2023, p. 270)

When describing the means used in the global context, the Swedish NC highlights its general history of multi-level environmental support from the private and public sectors in Sweden to the international community. It shares that Sweden has exceeded the UN international development aid goal of 0.7 percent of gross national income (GNI), as it dedicates 1 percent of GNI. It communicates the difficulty of presenting historical data, even recent due to policy incoherence and changes in framework because the climate relevance of some contributions becomes adjusted due to quality assurance of the tracking (Ministry of Climate and Enterprise, 2023). It also shares that Sweden's overall climate financing has tripled since 2014 (ibid, p. 245).

““According to the UN Framework Convention on Climate Change, “The developed country Parties [...] shall provide new and additional financial resources to meet the agreed full costs incurred by developing country Parties in complying with their obligations”. New and additional resources’ is a complex term, used in many multilateral contexts. There is currently no international agreement on how it should be defined.””

(Ministry of Climate and Enterprise, 2023)

It furthermore provides support through the Adaptation Fund, the Nordic Development Fund, the Climate Investments Funds, the Least Developed Countries Fund, the Multilateral Development Banks,

and UN organizations. Concluding this point, Sweden is one of the largest donors (per capita) to the Green Climate Fund (GCF) and the Global Environment Facility (GEF) through multilateral financial support.

“Sweden has also continued providing significant support to the Adaptation Fund and adaptation windows in other multilateral funds. Globally, the majority of international climate finance continues to be directed to climate change mitigation (70 percent in 2018) and only a relatively small proportion to climate change adaptation (21 percent in 2018). While adaptation is underfunded, the needs continue to grow, as do demands for support from adaptation finance“

- (Ministry of Climate and Enterprise, 2023, p. 253)

Furthermore, Sweden is involved in strategic initiatives linked to UNFCCC negotiations, such as the UNFCCC Trust Fund, the Fund for Supplementary Activities, the Trust Fund for Participation, the New Climate Economy, the International Institute for Environment and Development, the International Institute for Sustainable Development’s work with the Global Subsidies Initiative, and the Organisation for Economic Co-operation and Development’s (OECD) Research Collaborative on Tracking Climate Finance.

In addition, Sweden collaborates with other countries to tackle pressing climate issues like plastic pollution in the Arctic through initiatives such as the Nordic program to reduce its environmental impact (PAME), and efficient electricity distribution in India (India-Sweden Collaborative Industrial Research & Development Programme 2020). It also supports smaller international actors in mobilizing finance from private and public sources.

“In November 2020, a new program was launched to promote research and innovations; India-Sweden Collaborative Industrial Research & Development Programme 2020. The program is a collaboration between the Swedish Energy Agency and the Indian Department of Science and Technology. The program focuses on the development of smart grid technologies, recognizing the importance of efficient electricity distribution as demand for electricity grows. Jointly, the Swedish and Indian authorities will support industry led projects to develop smart grid solutions.”

(Ministry of Climate and Enterprise, 2023, p. 273)

The Swedish Energy Agency, the Swedish Environmental Protection Agency, and the Swedish Meteorological and Hydrological Institute were also involved in important climate initiatives, programs, and mechanisms, such as the Climate and Clean Air Coalition and the Sustainable Development Initiative.

Sweden addresses gender integration in the multilateral climate funds, including promoting separate gender policies and action plans that support gender-responsive actions, bringing value to the social dimension of sustainability in addition to the economically focused aid. In pursuing gender equality and women's empowerment in development programs, Sweden uses the OECD Development Assistance Committee’s (DAC) gender policy marker, an instrument designed to track and evaluate investment in this domain.

Sweden uses the Rio markers for climate change mitigation and adaptation to track climate finance. It writes out the total amount that has climate change as a principal objective but only comments on 40 percent of the finance provided to components with climate change as a significant objective. It is also stated that multilateral Financial support is provided to both Annex 1 and 2 parties.

4.1.2. Commenting on Swedish collaboration

The way it presents its economic contribution of 1 percent of GNI makes it evident that it is doing more than the UNFCCC framework recommends. However, no insight is provided into the contribution's viability to overcome the challenges of climate change, which can be interpreted as prioritizing the political agenda before actual environmental impact. However, communicating a more significant contribution to other nations can serve as a good example and may help other nations increase their allocated funds for environmental progress. That the overall climate funding in Sweden has tripled since 2014 also strengthens this argument.

The next aspect is the difficulty of presenting historical data due to policy inconsistency and changes in the framework of the UNFCCC, which strengthens the need for a more developed framework able to consistently show progress in a transparent way. The current incoherence threatens this transparency as progress can be presented while the actual emission or problem is being transferred to another sector or institute. It also threatens collaboration and increases the workload of communicating as collaborative policies clash.

The reliability and viability of the financial institutions and how collaborating with them enables Swedish collaboration to align with anthropocentrism or ecocentrism is unclear as each institution needs to be investigated further. However, taking an interdisciplinary approach in many ways of action, like mobilizing finances, gender equality, and reducing plastic waste in Nordic collaboration, make Sweden's involvement in international climate research and collaboration significant. It highlights the country's recognition of the global nature of climate change and the importance of international cooperation. Thus it contributes to a coordinated global effort to mitigate and adapt to climate change in line with several ecocentric principles. However, it does not share the extent to which economic incentives may or may not be present within these collaborations, nor how the institutions distribute the means.

The use of the OECD DAC gender policy marker strengthens transparency as it is a precise instrument able to evaluate and monitor investments. It raises accountability and indicates more clearly the extent of development stemming from the contribution. By leveraging the marker's framework, Sweden can continue to promote gender-responsive development domestically and globally and set an example for other countries to follow. Such action reflects several ecocentric aspects like adaptive management, efficiency, and the precautionary principle.

The use of the Rio markers is another area that strengthens transparency. However, only commenting on 40 percent of the finance provided to components with climate change as a significant objective, while it writes out the total amount that has climate change as a principal objective, raises the question of the nature of these left-out components where climate change is a significant objective. Whether or not the formulations are used in justifying unsustainable action is, as such, unclear.

4.1.2.1. Sida's initiatives

Sida, a Swedish government agency, has actively invested in initiatives promoting sustainable development in various developing countries. One of its key projects is the DemoEnvironment challenge fund, which aims to enhance living conditions, health, and adaptation capacities in select developing countries while minimizing negative environmental impacts.

Through the DemoEnvironment challenge fund, Sida has supported numerous projects that have successfully implemented new technologies, including producing roof tiles made from sand and recycled plastic in Kenya, sustainable forestry in Mozambique, and briquettes from fecal waste in Kenya.

Another initiative Sida supports is the Inclusive Green Economy (IGE) program, which promotes environmentally friendly and economically successful policies in Ethiopia, Kenya, Rwanda, Tanzania, and Uganda. This program focuses on enhancing governmental capacities to create an inclusive green economy and provides training to senior civil servants, policy-makers, academics, and civil society representatives.

Sida also supports the International Centre for Integrated Mountain Development (ICIMOD). This intergovernmental organization works to improve the well-being of men, women, and children in the Hindu Kush Himalayan region by reducing poverty, physical and social vulnerability and improving ecosystem services.

Moreover, Sida supports the Rwandan national climate and environment fund (FONERWA), which aims to mobilize domestic and international climate finance to fund projects that promote environmental sustainability, climate resilience, and green growth.

Sida has been committed to integrating the gender equality perspective throughout its operations, including the support for climate action, and has reported an overall level of gender integration of around 85 percent in its climate finance reporting.

4.1.2.2. Commenting on Sida

The level of integration reflected in these collaborations is essential for promoting the efficiency and long-term sustainability of development programs and initiatives funded by multilateral climate funds. Some initiatives, like DemoEnvironment, appear to prioritize anthropocentric values as it minimises environmental impact while enhancing the social aspects. The actions can lead to increased economic

possibilities in the area along with increased health and living conditions, while they are recognizing the environmental impact arising from this and addressing it to the best of their ability. This action does reflect green economy, but also inherent value, responsibility, and preservation of human life.

Considering Scale of ecological economy, this action is clearly within the limitations of the natural limitations and distribution, as ensuring the health and adaptation capabilities of the people this initiative reaches makes it possible for them to take part in the generations to come. As such, this initiative aligns with ecocentric principles on a global scale.

The Inclusive Green Economy program could also be ecocentric as it takes an interdisciplinary approach and adapts the management to regional demands. However, the prioritization of the economic agenda is in line with the anthropocentric. Therefore, it is evident that the economy is needed and goes hand in hand with making ecocentric initiatives in international settings possible. Thus, because of scale, the economic aspects of these collaborations and initiatives cannot fall under anthropocentric if the perspective is global. The scale of potential economic benefit is incomparable compared to how the nations generate economic income.

On another note, the terminology used in the text needs to be more well-defined. Thereby not all climate collaborations reported are transparent enough to ensure reliability behind the text. However, this does not mean that these initiatives are aligned with the anthropocentric perspective, but the nature of these environmental collaborations is subject to political structures affecting how and where collaborations are possible. Again, how the political, economic, or social agenda could be prioritized above the environmental agenda is not shared. It is very likely that the agendas contribute to other collaborations and leads to other possibilities within political, economic, social, or environmental agendas as they go on, reflecting responsibility, interdisciplinary and adaptive management of ecocentrism. Furthermore, as the NCs are written to the international community, it shows political agenda in line with ecocentrism as it uses the framework to communicate its will to foster international collaboration in an environmental spirit. In conclusion, it aligns with the ecocentric perspective, while the reasons to disbelieve this alignment is left out of the report as it lacks enough transparency to confirm.

4.1.2.3. Swedish research activities

Sweden is involved in the Intergovernmental Panel on Climate Change (IPCC) and the World Climate Research Program (WCRP). It enables the Swedish Meteorological and Hydrological Institute (SMHI) as Sweden's focal point for the IPCC. The Rossby Centre at SMHI has significantly contributed to climate projections for various regions worldwide. Sweden is researching environmental issues through the Centre for Environmental and Climate Research (CEC) and the Centre for Societal Risk Research (CSR) by monitoring air, forest, farmland, mountains, landscapes, wetlands, toxic substances, and health, among other parameters.

Sweden also participates in several international research networks and organizations, including the International Science Council, the International Arctic Science Committee (IASC), and the Global Biodiversity Information Facility.

Sweden is also an active member of the Global Research Alliance (GRA) on Agricultural Greenhouse Gases and participates in ongoing projects under the International Energy Agency (IEA).

Research funding in Sweden is provided mainly by research councils, private businesses, research foundations, and joint innovation programs for sustainability. While the Swedish Research Council has no specific mandate for climate research funding, it attracts climate-related research proposals through open calls. For example, the Swedish Energy Agency is one of the largest R&D funders, allocating funding to research, development, demonstration, commercialisation, and innovation in the energy sector, prioritising growth and export potential areas. Swedish publicly funded research activities focus on disaster and resilience research. These are allocated annually for decision-making around environmental and climate-related issues.

The Swedish Geological Survey (SGU) supports geo-scientifically oriented basic and applied research on climate trends. Similarly, the Swedish Geotechnical Institute (SGI) conducts applied research on ground construction, contaminated site management, and climate change adaptation.

The Swedish Environmental Research Institute (IVL) researches carbon dioxide emissions, energy scenarios, and climate effects on ecosystems. Sweden's strategic innovation programs (SIPs), such as Viable Cities, Strim, RE: Source, Innovair, InfraSweden 2030, Drive Sweden, and Bioinnovation, are highly relevant to reducing climate impacts.

4.1.2.4. Commenting on Swedish research activities

Sweden's research institutions and initiatives for climate change are diverse and wide-ranging. For instance, Sweden's strategic innovation programs (SIPs) illustrate how a cross-sectoral approach to sustainability can promote innovation and drive progress toward sustainability goals.

Sweden's involvement in the Intergovernmental Panel on Climate Change (IPCC) and the World Climate Research Program (WCRP) is instrumental in global collaboration on climate research, which has been enhanced by the Swedish Meteorological and Hydrological Institute (SMHI). The Rossby Centre at SMHI has enabled climate scientists and policymakers worldwide to make informed decisions by better understanding and predicting climate trends. Sweden is researching environmental issues through the Centre for Environmental and Climate Research (CEC) and the Centre for Societal Risk Research (CSR) by monitoring air, forest, farmland, mountains, landscapes, wetlands, toxic substances, and health, among other parameters. As such, Sweden fosters collaboration and knowledge-sharing among international researchers through its membership, promoting collective efforts toward a sustainable future. Furthermore, Sweden's focus on disaster and resilience research is helpful for other

countries in their sustainability considerations as it can help better understand and prepare for the impacts of climate change.

In conclusion, Sweden's national approaches to sustainability and its commitment to global collaboration on climate change research and initiatives demonstrate its dedication to promoting sustainability in a global setting. Its research is essential in developing the transition towards an ecocentric transition.

4.1.3. Norwegian Collaboration

Norway is actively taking part in creating policies, legislation, and institutions relating to climate change in other countries by investing financially, developing political relations, and offering economic incitements for climate action, such as transitioning to renewable energy and preserving forests. It also shares that Norway has exceeded the UN international development aid goal of 0.7 percent of gross national income (GNI) and dedicated 1 percent of GNI. In addition, the government mobilises private investments. For example, it promotes energy access through partnerships in Mozambique and Nepal and participation in multilateral partnerships like The International Renewable Energy Agency (IRENA) and Climate Investment Funds hosted by the World Bank. The focus is on facilitating private and commercial investments in renewable energy generation, strengthening institutions, and increasing capacity in the renewable energy sector.

Norway's contributions to disaster risk reduction and climate adaptation include support for the Global Facility for Disaster Reduction and Recovery (GFDRR), the ICIMOD, and Global Framework for Climate Services programs. Norwegian support for climate change adaptation focuses on climate-smart agriculture, food security, and strengthening resilience. Multilateral institutions such as the Adaptation Fund and the GCF also receive support from Norway for climate change adaptation.

The government-owned Norwegian Investment Fund for Developing Countries (Norfund) mobilises capital from the private sector in Norway and invests in profitable and sustainable businesses in developing countries. Its investment portfolio includes companies in sectors such as renewable energy, financial services, and agribusiness. The fund's core mission is to support economic and social development in these countries by investing in businesses that can generate tax revenues, create jobs, and offer goods and services that cater to local needs. Additionally, the fund provides technical assistance to the companies it invests in.

Norway considers the transfer of technology and capacity building essential to its development assistance, especially in promoting clean energy and responding to climate change. Norway supports technology transfer to developing countries in efforts to develop clean cooking, transmission, and distribution systems, establishing power pools, and digital capabilities, including co-founding the Digital Public Goods Alliance.

The private sector is seen as a critical driver of development in the transfer of technology. Through it, Norway supports small and medium-sized technology companies in developing countries through initiatives like the Private Finance Advisory Network. Establishing the Knowledge Bank in 2018 takes this one step further as it aims to revitalize and strengthen technical cooperation. Norway supports initiatives like the Climate Technology Centre and Network, Clean Energy Ministerial, and Mission Innovation. The GET FIT Program pilot in Uganda, which Norway co-funded with Germany, the UK, and the EU, is cited as a success story in capacity building and attracting private investment to the energy sector. Norway has no reported failures related to technology transfer.

4.1.3.1. Commenting on Norwegian Collaboration

The Norwegian collaborative actions in climate change mitigation and sustainable development have significant international implications reflecting anthropocentric and ecocentric values. The collaboration is focused on providing financial, technological, and capacity-building support to developing countries to reduce their carbon emissions and help them adapt to climate change. Furthermore, they aim to combat poverty while recognizing its linkages to climate change.

“The overall objective of Norwegian development cooperation is to fight poverty, save lives and alleviate suffering, in accordance with the humanitarian imperative.”

(Norwegian Ministry of Climate and Environment, 2022a, p. 305)

It reflects inherent value as it strives towards a long-term symbiosis between developing countries and nature through increased dependency on renewable energy instead of non-renewable resources. It also reflects taking a more considerable responsibility and helping other countries develop in ways Norway itself could not avoid on its path to where it is today. These efforts are primarily dependent on initiatives created by other parties and are largely made up of economic contributions, but national engagement with these international initiatives is crucial as an attempt to take global responsibility and maintain natural capital.

Norway’s contributions to disaster risk reduction and climate adaptation are significant and reflect ecocentrism similarly. By supporting organizations such as the GFDRR and the ICIMOD, Norway uses the precautionary principle and adaptive management to integrate disaster risk management and climate change adaptation into development strategies in vulnerable countries, which represent a crucial step towards future sustainability.

The Norfund initiative supports change in the right direction by improving lives in developing countries. It provides insight into its evaluative system, OECD DAC Rio markers, ensuring that the contributions do what is intended. However, it does refer to the earmarked contributions as “*approximations*” (Norwegian Ministry of Climate and Environment, 2022a, p. 307), indicating potential disparity. Its contribution to a wide variety of initiatives is used in recognition of ecological services through interdisciplinary insights, contributing to fostering collaboration further.

Additionally, Norway's contributions to building institutional capacity in small island states and supporting the work of the IPCC reflect a long-term commitment to sustainable development and the ecocentric preservation of the earth's ecosystems.

4.1.3.2. Norway's Means of Protecting the International Forests

Norway's next means of action to strengthen global sustainability is by reducing emissions from forest and land use. Norway's International Climate and Forest Initiative (NICFI) has supported global efforts to reduce GHG emissions from deforestation and forest degradation in developing countries since 2008, parallel to the United Nations Collaborative Initiative on Reducing Emissions from Deforestation and Forest Degradation (REDD+) in developing countries, as well as supporting REDD+ itself financially. NICFI has agreements with developing nations, including Guyana, Indonesia, Vietnam, Ethiopia, and Liberia.

“In 2008, Norway pledged to contribute up to USD 1 billion to the Amazon Fund in Brazil until 2015, if Brazil could show that deforestation in the Amazon went down. From 2008 to 2014, Brazil reduced deforestation in the Amazon by around 60 per cent. Based on these results, by the end of 2015 Norway fulfilled its 2008-commitment to contribute USD 1 billion to the Brazilian Amazon Fund in recognition of Brazil's massive reductions of deforestation in its Amazon region. Since 2015 the deforestation in the Brazilian Amazon has increased. Norway only pays Brazil when it reduces deforestation.”

(Norwegian Ministry of Climate and Environment, 2022a, p. 340)

Developing countries that have made significant progress in their REDD+ readiness endeavors may be selected to participate in the Carbon Fund of the World Bank's Forest Carbon Partnership Facility (FCPF), through which they can receive results-based payments for verified emissions reductions. The Carbon Fund is intended to incentivize the recipient countries and the various stakeholders, including forest-dependent indigenous peoples, other forest dwellers, and the private sector within each country, to achieve long-term sustainability in financing forest conservation and management programs.

Along with several other international partners, Norway's contributions focus on protecting rainforests in Colombia and Guyana. Payments were not just for verified emissions reductions in 2019-2020 but were also for program support for REDD+ investments in countries like Indonesia, Ethiopia, Peru, Liberia, and Tanzania.

Furthermore, Norway's multilateral financial support includes contributions to initiatives like the Central African Forest Initiative (CAFI) and BioCarbon Fund. NICFI has also contributed to a technology revolution that has provided new opportunities for monitoring forests since 2009. The Global Forest Watch website is a crucial example, which provides forest countries with free data on forests, deforestation over time, forest fires, and other related information. In addition, NICFI supports civil society, private sector initiatives, institutions, and governments in their efforts to contribute to the deforestation-free production of commodities.

Furthermore, support is provided to Africa and Asia through Civil society organizations (CSOs) to map indigenous peoples' land tenure rights through community forestry in The Democratic Republic of the Congo, and Indonesia. Norway also supports specialized instruments for land use reforms, such as the International Forest and Land Tenure Facility. The nation also cooperates closely with other countries and private actors to follow up on the Forest and Tenure Pledge from CoP 26 in Glasgow, in close dialogue with the Global Alliance of Territorial Communities, to enable more direct support, establish mutual accountability, and recognize the forest guardianship of indigenous peoples and local communities.

4.1.3.3. Commenting on Norwegian means of protecting the forests

Protecting our global forests is among the most cost-effective ways to mitigate climate change. It is also a core element of strong sustainability. By working with these countries to reduce deforestation and promote sustainable forest management practices, Norway is helping to mitigate the impact of climate change on a global scale. The various ways they take part in operationalizing this help reduce the negative impact on the global climate from the loss and impoverishment of forests, thus aligning with ecocentrism as it recognizes deep ecology with the inherent value of the forests, and strong sustainability by maintaining the natural capital and realizing the detrimental consequences of depleting natural resources.

4.1.3.4. Norwegian climate research

Norway's following means of action are investing in technology and projects able of carbon capture and storage (CCS) and actively participating in various regional and international initiatives such as the Carbon Sequestration Leadership Forum (CSLF), World Bank CCS Capacity Building Trust Fund, and the Zero Emission Platform (ZEP). Norway has demonstrated experience with safe and secure CCS, with nearly 1 million tonnes of CO₂ stored annually since 1996.

Much of this cooperation entails more capacity building, transfer of technology, and institutional development through, for example, the Alliance of Small Island States (AOSIS) and the United Nations Partnership for Action on the Green Economy (PAGE).

Furthermore, Norway contributes by reducing emissions in developing countries through the Climate and Clean Air Coalition to reduce short-lived climate pollutants (CCAC).

Through government funding, Norway has developed the Technology Centre Mongstad (TCM), the world's largest facility for testing and improving CO₂ capture technologies through the CLIMIT program and the Centre for Environment-friendly Energy Research for CCS (NCCS).

“The Technology Centre Mongstad (TCM) is the world's largest facility for testing and improving CO₂ capture technologies. TCM has been operating since 2012, providing an arena for targeted development, testing and qualification

of CO2 capture technologies on an industrial scale. It is a collaborative project between the Norwegian Government, Statoil, Shell and Total.“

(Norwegian Ministry of Climate and Environment, 2022a, p. 353)

The vastly expensive full-scale CCS demonstration project Longship, consisting of two Norwegian CO2 capture facilities and a CO2 transport and storage project, is under development. In addition, they have another project called The Northern Lights project which is expected to be operational in 2024, with the potential of 1.5 million tonnes of CO2 stored annually in its first phase and 5 million tonnes in its second phase.

Furthermore, the Norwegian government collaborates with relevant countries on a bilateral basis and through various international parties. It provides funding for CCS projects abroad in cooperation with other countries and through existing programs and institutions. For example, the CCS on the Longship project's cement factory and the waste-to-energy plant is estimated to reduce emissions by 0.4 million tonnes annually from 2025 and 0.8 million tonnes annually from 2027.

Furthermore, Norway is well-integrated into European research and higher education collaboration. It has taken part in this competitive arena for more than 20 years. The Government states that it will continue its work to stimulate institution-based, long-term international collaboration.

Norway also participates in the European Space Agency (ESA), providing access to valuable satellite data for global climate monitoring. However, it does not have a national system for monitoring, reporting, and evaluating climate change. Instead, it has several environmental monitoring programs. These monitor greenhouse gases, ozone layer thickness, UV-radiation levels, aerosols, and other air pollutants, coastal monitoring of flora and fauna, ocean acidification, and terrestrial observations (Norwegian Ministry of Climate and Environment, 2022a, p. 364). Their research combines European monitoring observations to trace gases under the Convention on Long-range Transboundary Air Pollution (CLRTAP) and Advanced Global Atmospheric Gases Experiment (AGAGE).

4.1.3.5. Commenting on Norwegian climate research

The Norwegian government's efforts in CCS as an essential mitigation tool to combat climate change represent a way to combat climate change through growth and development of new technology. It is also tremendously costly and can only be stated as anthropocentric when seen as an example of human development in the Anthropocene, as it is attempting to impact our global ecosystem and potentially control aspects of it in the future. The means to fund it is the decisive factor in determining its viability as a way to combat climate change. If the funding comes from sources able to generate the funding with a lower emission rate than what the CCS can sequester, the initiatives could be considered to align with ecocentric principles. However, if the funding stems from instrumental, exhaustive sources like oil, and the expected capacity is lower than the expected emissions of continued oil extraction, it is closer to an attempt to justify detrimental environmental action with technological growth. It is a matter of

perspective if CCS is reasonable or not. Its intended purpose is to combat climate change while continuing to develop the current detrimental ways of our growth-oriented society. It is thus reflecting anthropocentric values as it is creating a technology able to replace ecological services of the ecosystem with an artificial alternative.

Through CCS-related research, its contribution of satellite data for environmental monitoring, and its participation in international cooperation, Norway participates in the global knowledge development trend and contributes to countries worldwide. However, the lack of a national system for monitoring, reporting, and evaluating climate change is unexpected, especially as the programs monitoring many environmental factors are as developed as they are. It prioritizes the development of new technology rather than developing a system able to provide a fair assessment of the national effects of climate change.

4.2. How does the intended future of the respective countries' largest GDP-generating/GHG-emitting sectors align with Ecocentric versus Anthropocentric theory?

Answering this question entails reviewing the structure of total emissions in the respective countries while delving deeper into the sectors contributing most to climate change. This shows further connections and implications from the report.

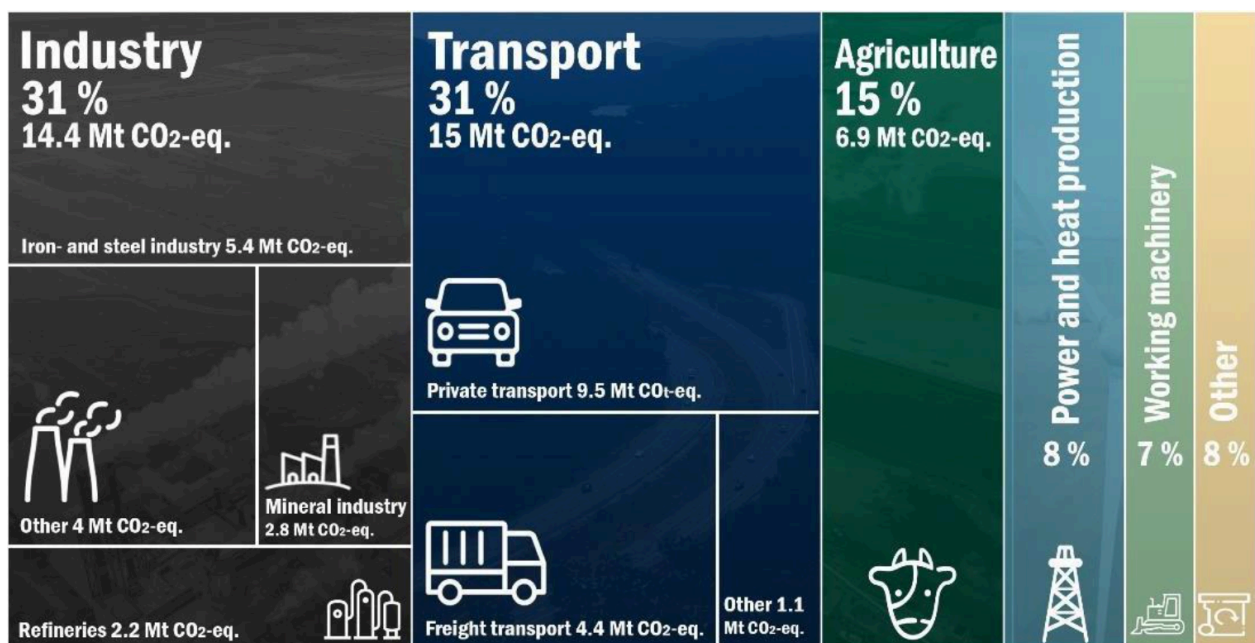


Figure 3. Sweden's total GHG emissions in 2020 divided by sectors.

Source Swedish EPA (Ministry of Climate and Enterprise, 2023, p. 66)

4.2.1. Sweden's GHG emissions

Sweden's total GHG emissions were reportedly 46.3 million tonnes of carbon dioxide equivalents in 2020, a decrease of 35 percent compared to 1990. The nation's largest emissions sources in 2020 were the energy sector, responsible for 69 percent of emissions, agriculture for 15 percent, and industrial processes with the use of products another 14 percent. If isolating the industry sector from the energy sector and industrial processes, it makes up 31 percent of total emissions. When isolating the transport sector, it makes up another 31 percent. There is no mention of the military in the NC.

4.2.1.1. Swedish Energy sector

The decrease in emissions from the energy sector was 8 percent in 2020 compared to 2019 due to a reduction in fossil fuel combustion for heating and increased use of renewable energy and district heating based on biofuels and waste. Compared to 1990, the emissions of the sector have decreased by 31 percent, yet its output in district heating has increased by 50 percent. However, emissions from product use were three times higher in 2020 than in 1990 due to fluorinated gases replacing ozone-depleting substances. And the decrease is also due to the *"very warm weather"* (Ministry of Climate and Enterprise, 2023, p. 67)

4.2.1.2. Swedish Agriculture, Forest, & Fishing

Agriculture emissions have decreased by 10 percent between 2020 and 1990 due to reduced animal numbers and mineral fertilizer use. Together with forestry and fisheries, the reduction in these sectors was 37 percent compared to 1990. Increasing domestic food production is recognized as beneficial to Swedish agriculture, trade, and infrastructure, but the production processes reportedly need to adapt regarding climate change. The Swedish Environmental Research Institute (IVL), SMHIs climate monitoring alongside more active research initiatives plays a crucial role in innovating less carbon-intensive processes. Reduced animal numbers are justified by the risk of an outbreak of infectious animal diseases.

The Swedish forests cover 58 percent of the total land area. Only 11 percent of the forests are considered unproductive and are left alone. Ecosystem-based forestry that mimics natural ecosystems is being experimented with to lower climate-related risks of managed forests. However, clear-cutting is still the standardized management method, and even though Svea, the state-owned largest forest land-owning company, reports more felling, the forest management practices have resulted in increasing standing timber volume. Biomass is used for energy, and ash is distributed to counter soil depletion. Together with agriculture, fishing, and mineral extraction, the forest industry amounted to 2 percent of the GDP in 2021.

4.2.1.3. Swedish Waste Sector

Emissions from the waste sector made up 2 percent of national GHG emissions in 2020. They decreased by 6 percent since 2019 and 73 percent since 1990, as waste management has shifted from landfills towards incineration for energy recovery. In 2018 Sweden generated 139 million tonnes (Mt) of waste, 104 Mt from the mining sector, 12.4 Mt from the construction sector, households 4.5 Mt, and the service industry 2.1 Mt.

“Emissions from the incineration of waste for electricity and heat production are allocated to the energy sector and not to the waste sector” (Ministry of Climate and Enterprise, 2023, p. 73).

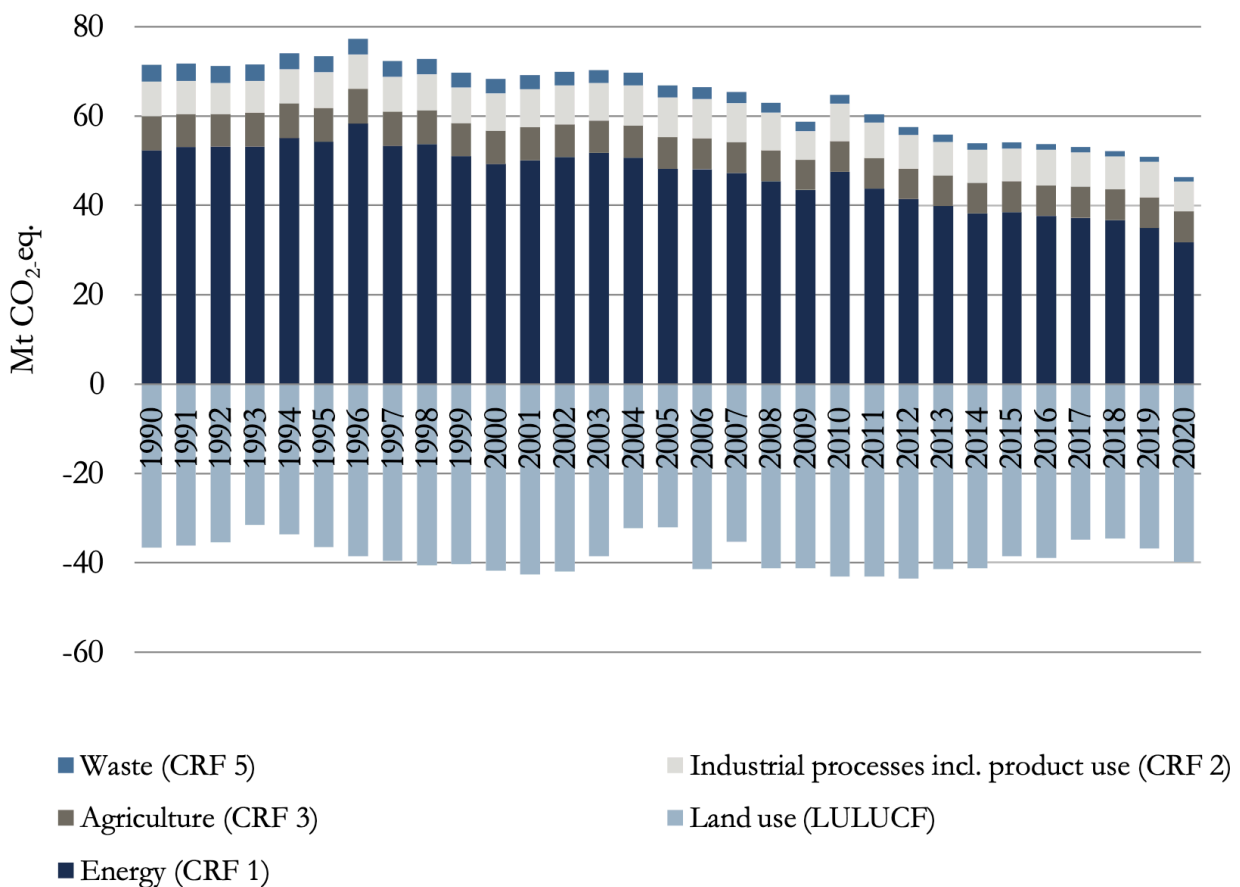


Figure 4. Swedish CO2 emissions in million tonnes (MT) over time.

(Ministry of Climate and Enterprise, 2023, p. 15)

4.2.1.4. Swedish LULUCF-Sector

Sweden's LULUCF-sector (Land use, Land use change and Forestry) net removals are heavily influenced by forest land making up 63 percent of Sweden's land area, with living biomass and mineral soils being the major contributors. The net removals have varied from 1990 to 2020 due to natural

disturbances and harvests but have increased slightly over the period. Regarding international shipping and aviation, GHG emissions from international shipping increased in 2020, while global GHG emissions from international aviation decreased by 65 percent in 2020 due to the COVID-19 pandemic. Still, emissions in the years before were twice as high as in 1990, with a rising trend due to travel growth.

4.2.1.5. Swedish Industry

Swedish industry is based mainly on the natural resources of ore, steel, wood, and the chemical industry. Emissions from the mining, ore, and steel industries amounted to 5.4 Mt Co2 equivalents in 2020. Emissions from combustion in manufacturing industries and construction were 44 percent lower than in 1990. Emissions in 2020 decreased by 12 percent compared to 2019. Although increasing slightly until 1997, the emissions are expected to decrease steadily until 2040, while production is expected to grow. The lower emissions in 2009 and higher emissions in 2010 were due to the financial crisis's impact on production levels and their subsequent recovery. As GHG emissions have been lowered over the last decades, the development is slowly transitioning to biofuels, electric heating, and reduced use of landfills. Instruments like EU European Training Foundation (ETF) are ever present in industrial processes, as is energy and Co2 taxes. The decreasing trend is primarily due to oil being replaced by electricity or biofuels, partly depending on the economic incentive in the difference in relative price between electricity and oil. The mineral industry is also expected to decrease, while emissions from the iron, steel, and chemical industry are expected to remain relatively stable. The intended timeframe is depicted in Table 4 below, where a decrease in growth rate in the various industries is expected after 2035.

Manufacturing from these natural resources accounts for 20 percent of the national GDP and is, together with the industry and chemical sectors, heavily reliant on export, making up 47 percent of GDP. The manufactured export comprises vehicles, machines, pharmaceuticals and chemicals, wood products, paper and pulp, electronics, and minerals.

Table 4. projected growth in Swedish Industry

Industry	Annual growth (%) 2015-2035	Annual growth (%) 2035-2040
Pulp and paper industry	2.05	1.33
Chemical industry	1.80	2.05
Iron and steel industry	0.29	0.16
Manufacture of non-metallic mineral products	1.20	1.21
Non-ferrous metalworks	1.07	0.83
Engineering industry	1.33	1.55

(Ministry of Climate and Enterprise, 2023, p. 380)

4.2.1.6. Swedish Transport Sector

Emissions from domestic transport have decreased by 23 percent since 1990 due to sustainable biofuels and more efficient vehicles, while traffic has increased. This includes road transport, domestic civil aviation, railways, national shipping, and non-road mobile machinery. The GHG emissions from international shipping and aviation are reported as “*considerably larger*” than those from domestic shipping and aviation (Ministry of Climate and Enterprise, 2023, p. 76). In 2020, emissions from international shipping increased by 20 percent compared with 2019 and 251 percent compared to 1990. Whether or not this increase entails both export and import remains unclear. Emissions from international aviation decreased globally by 65 percent in 2020 compared to 2019 and 30 percent lower than in 1990 due to the Covid pandemic, but are expected to rise.

“During the years before the pandemic, emissions were twice as high as in 1990. Emissions from international bunkering of aviation have varied over time, but the trend points to a rise in these emissions, owing to growth in travel abroad”

(Ministry of Climate and Enterprise, 2023, p. 77)

Furthermore, the transport sector is highly connected to research and development through several large programs stretching from the cultivation of raw materials for bio-based motor fuels, to entirely new fuels such as triple F (Fossil Free Freight).

4.2.2. Commenting on Swedish emissions

According to the report's national disposition, Sweden reports significant progress in reducing GHG, reporting a decrease of 35 percent between 1990 and 2020, with a trend toward reducing emissions through policy initiatives. It also reports a strong growing economy overall during that period. Sweden's total GHG emissions were reportedly 46.3 million tonnes of carbon dioxide equivalents in 2020. However, if consumption-related and international shipping and aviation emissions were included, the actual number would be around 61.55 million tonnes (Friedlingstein et al., 2022) or 90 million tonnes of CO₂ annually (Naturskyddsföreningen, 2017), depending on the parameters included. This indicates a significant disparity between the emissions reported in the NC and the actual GHG emissions in Sweden, highlighting the need for a more comprehensive, transparent, and accurate reporting system to track progress toward environmental sustainability.

Furthermore, the fact that the transport sector only reports domestic aviation, not international aviation, indicates that flying to and from the country is preferable to nationally reported emissions compared to flying within the country. Moreover, the fact that international shipping increased by 20 percent compared with 2019 and 251 percent compared to 1990 clearly makes this a matter of concern in the framework of the NCs.

In addition, the fact that the military is excluded raises concerns.

National communications should recognize and address all aspects of a country's GHG emissions, including consumption, imports, and international aviation. Neglecting these emissions lead to an incomplete understanding of a country's impact on the global climate and hinder efforts to address climate change, hindering the global vision of sustainability from taking shape and corrupting the data. Setting targets and policies to reduce consumption-based emissions can also contribute to a more sustainable and equitable global economy.

Innovation in the transport sector is essential for global sustainability, and the search for new raw materials could develop the transport sector significantly. While the matter of if this development is aligned with ecocentrism or anthropocentrism depends on more information, the search for new ways to replace ill-functioning solutions is essential for a transition. However, it is still within the growth perspective while time runs out to combat climate change, as such resources could be allocated to areas of more direct impact using established processes.

4.2.2.1. Commenting on the Swedish industry

The Swedish industry is transitioning to using renewable and less carbon-intensive energy. However, the ore, steel, and mining industry is steadily developing. As the less carbon-intensive processes are being innovated and adapted, the sectors are growing at a pace where the emissions are being kept around the same levels. As such, these sectors have no ecocentric intent, and they align more with the anthropocentric perspective, as economic growth is central and prioritized above environmental action. If any measures or intentions are in progress to transition to a more ecocentric alignment, they are excluded as no ecocentric principles are addressed in this context. The political and economic agenda is prioritized, and continuous expected growth in a finite world is intended.

4.2.2.2. Commenting on agriculture and forest

The decreasing emissions from the agricultural sector are reportedly due to fewer animals and less use of mineral fertilizer. However, this reduction translates to more imported food, resulting in higher total emissions connected to the 251 percent increase in international shipping and less locally produced food. Thus, the decrease in emissions is transferred to another section. At the same time, the report highlights the need to develop domestic agricultural processes and the population's health. It displays a disparity between emissions caused by increased imports and climate adaptation as reducing the aspects of food production most prone to disease due to a changing ecosystem. Becoming more dependent on international food production would increase dependency and weaken food security in Sweden while decreasing control over food production. It displays instrumentalism and prioritization of political agenda in that food-related import emissions are counted differently than nationally produced food. How the number of animals is reduced also remains unclear. The varying measures in place embrace the early stages of the precautionary principle in that related research addresses the issue of sustainable food production in a changing ecosystem. It also displays shallow ecology in its exploitive intent to

increase imports regardless of increased international emissions, and weak sustainability in justifying the change to less resilient food sources with a reported decrease in food production.

However, the principle of scale, meaning to stay within the natural limitations, is most closely found in the Swedish forestry management principles as forests are being replenished in volume. Although, managed forests do not contain the same ecosystem as natural forests. Not protecting the ecosystems longer than what it takes managed forests to grow until ready for production is not in line with this principle as it limits biodiversity. It also represents misconduct according to the precautionary principle as it takes action without considering the natural ecosystem. Old forests are put at risk and being cut down, resulting in threatening biodiversity, which cannot thrive in managed forests as well as in old untouched forests. It partially recognizes the ecological services as it is being used in the LULUCF sector to remove emissions. However, that is also misconduct, as ecological services should not be understood as an excuse to raise emissions in other sectors.

4.2.2.3. Commenting on the waste sector

The transferred emissions from the waste sector to the energy sector since 1990 represent the country's innovativeness. Using such a considerable number to display the reduction could serve as inspiration to other countries to make a similar shift in waste management. The most significant waste being produced is a result of the mining sector, and the sheer amount compared to that of the household sector lead does indicate where change needs to happen if a reduction of waste-related emissions is desirable. It also strengthens the reason for all citizens to do their part and recycle, as this effort reinforces the sense of responsibility, which, if used collectively, could significantly influence a change in the more carbon-intensive sectors.

4.2.3. Norway's GHG emissions

Norway's emissions are briefly described in the various sectors, and while more can be said about each one of them, the focus lies on the sectors most relevant to the research question.

“Total emissions increased in the 1990s, but have, since the turn of the century, been more or less stable, and declined in recent years (9.6 per cent since 2015), cf. Figure 3.1. While emissions of CO₂ from most sources have increased, emissions of other Greenhouse gases have decreased (cf. Figure 3.3). Since 1990 Norway has experienced strong economic and population growth as well as expansion of petroleum extraction. These factors have led to increased use of fossil fuels, and consequently higher CO₂ emissions. However, the overall growth in CO₂ has been partly offset by reductions in other gases and sectors. In 2020, emissions decreased by 3.5 per cent, and were 4.2 per cent lower than in 1990.”

(Norwegian Ministry of Climate and Environment, 2022b, p. 57)

The total GHG emissions in Norway were 49.1 million tonnes in 2021, an increase of 17 percent since 1990. However, emissions peaked in 2007 at 56.6 million tonnes and have decreased since. The increase is a direct result of the increasing oil and gas extraction, the growing fishing industry, and transport

emissions related to it. The energy sector is responsible for 80 percent of all emissions, and industrial processes and product use is responsible for 19 percent. If isolating the transport sector, it makes up 28.4 percent. Norway intends to increase offshore wind power production to the point where it is capable of fulfilling the needs of the country by 2040 (Norwegian Ministry of Climate and Environment, 2022a, p. 130).

“The Norwegian electricity production is dominated by hydroelectric power. Thus, emissions from energy industries origin almost completely from fuel combustion in oil and gas extraction and related activities.”

(Norwegian Ministry of Climate and Environment, 2022a, p. 61)

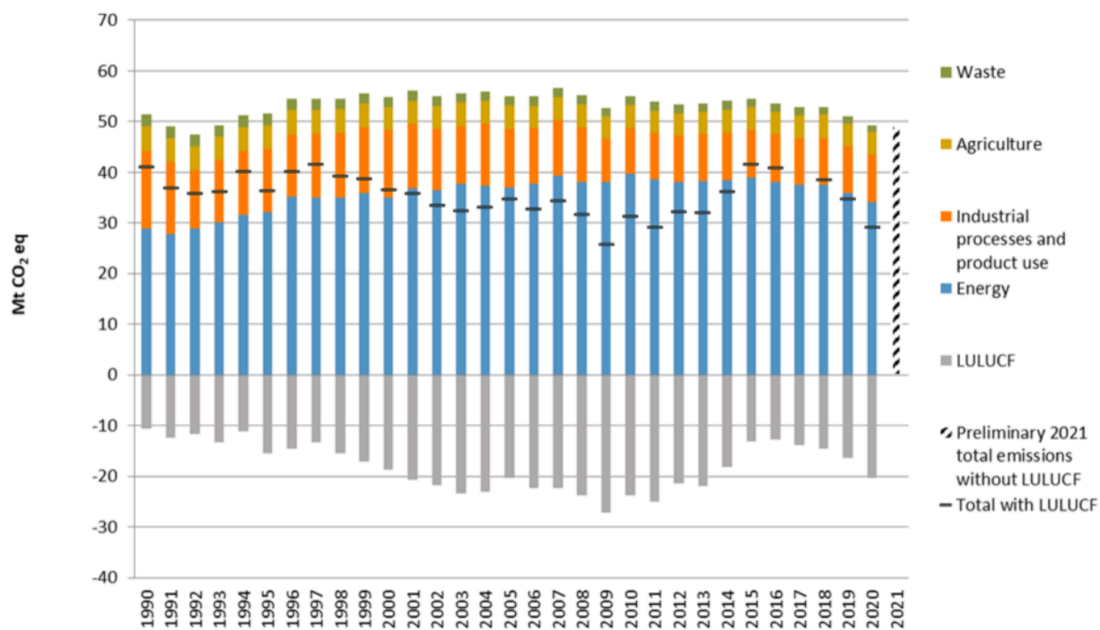


Figure 5. Total emissions of Greenhouse gases by sources and removals from LULUCF in Norway, 1990-2020 (million tonnes CO₂ equivalents), and preliminary emissions estimates for 2021

(Norwegian Ministry of Climate and Environment, 2022b, p. 59)

4.2.3.1. Norwegian Transport sector

Since 2015 emissions in road transport have decreased by 18.5 percent. This is attributed to more efficient vehicles, more electric vehicles, and that the use of biofuels has increased by 171 percent between 2015 and 2020. An interesting find concerning aviation and biofuels was that there is only one mention of the military in the Norwegian NC, stating that military aircrafts are exempted from the mandate requiring 0.5 percent of fuels to be advanced biofuels in aviation (Norwegian Ministry of Climate and Environment, 2022a, p. 148).

4.2.3.2. Norwegian LULUCF-Sector

Following the framework, the LULUCF sector was used as a GHG removal system in which 18 Mt Co₂ was removed between 1990 and 2020. Furthermore, in 2020 this removal was estimated to be about 41 percent of total national GHG emissions from all other sectors.

4.2.3.3. Norwegian Agriculture

Agriculture was responsible for 8.4 percent of national emissions in 2020, a reduction of 5 percent since 1990, but diesel and petroleum used for agricultural activities have been used to communicate this reduction.

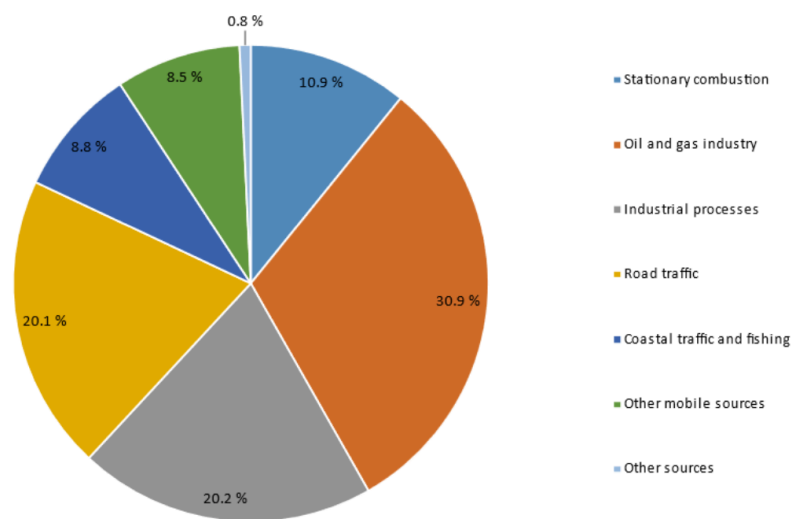


Figure 6. Distribution of CO₂ emissions in Norway by sub-categories in 2020

Source Statistics Norway/ Norwegian Environment Agency (Norwegian Ministry of Climate and Environment, 2022b, p. 62)

4.2.3.4. Waste sector

The waste sector made up 2.8 percent of national GHG emissions in 2020. Most of the emissions originated from solid waste disposal on land. GHG emissions from the waste sector have generally decreased since 1990, primarily due to the increase in material recycling and the ban on disposing of biodegradable waste in landfills, resulting in a 59 percent decline from 1990 to 2020. This decline is said to compensate for the growing oil and gas industry emissions. However, methane emissions have increased by 43 percent since 1990.

This information shows that the largest GDP-generating/GHG-emitting sectors are the oil and fishing industries and related transport. The relevant information from the NC has been interpreted below to

answer how the intended future of Norway's largest GDP generating/GHG emitting sectors is described and whether they align more with Ecocentric or Anthropocentric theory.

4.2.3.5. The Norwegian Oil industry

As is well known, the Norwegian economy has greatly benefited from its oil deposits in the face of globalization. The GDP tripled from 1990 to 2020, and the oil industry has generated more than 18,000 billion NOK since production started in the early 1970s. It is Norway's largest industry regarding value-added, government revenue, investments, and export. It makes up roughly 25 percent of the National GDP, and yet it is not a comprehensive employment sector, and the related services within borders make up 0.23 percent of the GDP. A total of 119 oil fields have been used, and 94 are currently active. Because of its existence, Norway has become one of the big players in the global energy market and the largest producer of oil and gas in Europe. The oil extraction and related sales industries are still growing, and they are expected to stay high for the coming decade, after which a slight decrease is intended due to the expectation of stricter global climate policy and faster technological development. However, recent development with the European energy crises supports further development in oil extraction.

"About 40 per cent of Norway's estimated gas resources have been produced and sold so far. Gas production is expected to remain high for the next 10 years."

(Norwegian Ministry of Climate and Environment, 2022b, p. 48)

Norway has implemented measures to reduce emissions, and the industry is expected to decline in importance in the coming decades as Norway aims to reduce emissions by at least 55 percent by 2030.

"Norwegian oil and gas activities are expected to have a continuous natural decline after 2030."

(Norwegian Ministry of Climate and Environment, 2022b, p. 257)

Nearly all gas produced is exported to other European countries, contributing to their energy security. In 2021, Norway exported about 113 billion Sm³ gas, covering up to 30 percent of the EU's and UK's gas consumption. Norwegian natural gas support the phasing-out of coal in energy consumption in many European countries and is described as an important co-player with renewables in efforts to reduce emissions. As a result, Norway's domestic gas consumption is limited, and most of it is used for industrial purposes.

"A fundamental principle in Norway's adaptation policy is that the actor responsible for the work also is the actor responsible for the task or function affected by climate change. In consequence, everyone has a responsibility for climate change adaptation: individuals, households, private businesses and the public sector."

(Norwegian Ministry of Climate and Environment, 2022a, p. 262)

Furthermore, the country has implemented several measures to reduce emissions from petroleum activities, including energy efficiency measures and carbon capture and storage technology. However,

the report does not include the Co2 equivalents of the exported oil. Another interesting finding was that the Norwegian Oil for Development (OfD) program assists developing countries in managing petroleum resources in a way that generates economic growth and promotes the welfare of the whole population in an environmentally sound way to "*economically, environmentally and socially responsible management of petroleum resources which safeguards the needs of future generations*" (Norwegian Ministry of Climate and Environment, 2022a, p. 93). Furthermore, Norway is heavily invested in innovative ways to lower emissions, for example, the Hywind Tampen project, a floating offshore wind farm providing energy to offshore oil platforms implemented in 2023.

4.2.3.6. Fishing Industry

Norwegian fishing and aquaculture industries are vital to the country's economy and food supply. With Norway supplying seafood to more than 130 countries, it is the second-largest seafood exporter globally, and seafood consumption is expected to expand substantially over the coming 20-30 years.

However, these industries face challenges from climate change and various types of pollution, including ocean acidification. The fisheries sector is focused on improving fuel efficiency, finding alternatives to fossil fuels, and replacing refrigerants with high global warming potential, e.g., onboard cooling systems with climate-neutral ones. Technological developments have allowed for larger catches with less fuel consumption, and optimization of feed use is reducing the climate impact of salmon aquaculture products. However, the fishing industry is expanding, and emissions with it.

Enova supports climate and energy solutions for the transport sector on land and at sea. It is part of helping the fish farming industry as it is transitioning slowly to electricity as a power source. Moreover, it is innovative as it invests significantly in an oceanic hydrogen fuel system as a power source for fishing boats being out at sea for 4-6 weeks at a time. Furthermore, the fishing industry is exempted from tax on mineral oil, otherwise banned for heating purposes in Norway. In addition, Norway offers a loan scheme for the short-sea fisheries operating closer to land to replace old more carbon-intensive vessels with low or zero-emission technology. In addition to this is the MaritimeZero2050 initiative, focusing on researching possibilities for zero-emission long-distance vessels, including nuclear propulsion and hydrogen-powered vessels.

Biodiversity is not addressed in many ways concerning fishing, but salmonids are reportedly exposed to the impacts of climate change, and cod populations have declined significantly over the past decades.

"Several of the coastal cod stocks have declined significantly over the past decades. A number of factors are probably involved in this, one of which may be climate change." (ibid, p. 256).

As climate change leads to higher sea temperatures, a significant distribution of marine organisms is expected to migrate to Norwegian waters, leading to greater fishing potential, and expansion of the fishing industry is expected to follow. As such, climate change is expected to increase fishing potential and resources in Norwegian waters. However, temperature affects aquaculture growth rates, algae

blooming, ocean acidification, and disease, and may change the industry's structural changes, possibly including off-shore aquaculture technology. Finally, due to Arctic polar ice melting, fishing possibilities emerge there but are not expected in the near future.

4.2.4. Commenting on Norway's emissions

Overall, Norway's efforts to reduce GHG emissions are significant, particularly in the transport sector, where reductions have been achieved through a combination of more efficient vehicles, more electric vehicles, and increased use of biofuels. The LULUCF sector has also provided a substantial sink for GHG emissions. However, further reductions are necessary to meet Norway's goal of becoming a carbon-neutral society by 2030. The Norwegian NC presents significant efforts to reduce GHG emissions. However, Norway's oil sector continues to contribute to GHG emissions and presents a significant challenge to overcome for further emissions reductions. Norway's approach to reducing GHG emissions has shown progress, but further efforts are needed to address the social and economic dimensions of sustainability and emissions from the oil and gas extraction sector and agriculture.

4.2.4.1. Commenting on Norwegian Fishing

From an Ecocentric perspective, the Norwegian fishing industry's environmental impact is a significant concern. The industry is affected by climate change, ocean acidification, and pollution. While technological developments, and financial aid, have reduced fuel consumption and improved fishing methods, the industry must strive for more sustainable practices such as improving fuel efficiency, transitioning to alternative energy sources, and optimizing feed use. Furthermore, reducing overfishing and protecting vulnerable marine ecosystems are vital to achieving sustainable fishing practices. As such, no initiatives are being undertaken to lower sea temperatures and protect the current biodiversity. It is more apparent how the business aspects are strengthened as possibilities arise with climate change to expand the industry further. It is, as such more in line with an Anthropocentric perspective that emphasizes the economic benefits of the Norwegian fishing industry as it significantly contributes to the country's economy and can continue to do so long term. Reducing GHG emissions, minimizing pollution, and managing fish stocks sustainably to ensure long-term viability is not the most significant concern. The industry's contribution to food security and the economic growth of Norway is prioritized over environmental impact.

However, the industry's efforts to reduce fuel consumption and transition to climate-neutral cooling systems are positive, as they can lower costs and improve profitability. Using electricity as a power source and developing more efficient fishing methods are also essential for achieving Anthropocentric sustainability.

The issues and challenges the Norwegian fishing industry faces are not unique to Norway alone but are shared by many countries with fishing and aquaculture industries worldwide. The industry's impact on

the environment and the challenge of balancing economic growth with environmental sustainability as a global issue require a coordinated international effort, which does not exist today.

4.2.4.2. Commenting on Norwegian Oil

From an ecological perspective, the continuous manufacturing and marketing of petroleum in Norway pose a significant threat to our surroundings. Continuously engaging in oil extraction has substantial repercussions for environmental stability worldwide. Oil extraction and transportation are widely known as highly detrimental processes leading to increased GHG emissions that contribute significantly towards accelerated global warming and consequent climate change effects. Moreover, continuing heavy reliance on non-renewable energy resources presents risks to biodiversity and ecosystems, ultimately disrupting the balance within our environment. Nevertheless, breaking away from fossil fuels will present obstacles requiring significant investment into developing new projects related to infrastructure development.

When adopting the anthropocentric perspective, Norway's oil sector holds immense significance in maintaining its economy and supporting vital social welfare schemes. This field generates substantial gains for public institutions and private entities through various means. Moreover, it offers energy security across different regions of Europe on an extensive scale and assists in European energy security by reducing European coal consumption. While relying heavily on petroleum production aggravates global GHG emissions significantly, Norway has made significant strides toward reducing its carbon footprint by assimilating sustainable sources that align with the existing system.

Both perspectives must be considered to achieve sustainable global collaboration, and countries like Norway must balance economic growth with environmental protection. Norway's significant steps to reduce its carbon footprint and transition to a more sustainable future, including setting ambitious emissions reduction targets under the Paris Agreement and investing in renewable energy sources like hydropower and wind energy necessary steps in developing our vision, and the financial means necessary to develop them must come from somewhere. Even so, the transition will not necessarily equal a bad economy, as many opportunities exist within it.

Furthermore, the global impact of Norway's oil industry must be addressed when promoting the transition toward a more sustainable society. Oil dependency is expected to diminish gradually due to worldwide environmental regulations tightening and technological advancements on a global scale. From an ecocentric standpoint, Norway should advocate for these changes by leading by example and taking firmer steps towards reducing oil extraction much sooner than intended in the report. While the resources gained from the extraction are partly used to invest in renewable energy and transfer technology and expertise to many partnering and developing countries, more is needed to allow continued pumping from both the ecocentric and anthropocentric perspectives. The closest action able to defend continued pumping would be sufficient Norwegian contributions to replace Europe's energy

dependency on oil with renewable energy sources, in line with the idea behind the argument of the principle of common but differentiated responsibilities and respective capabilities, and at the possible expense of the Norwegian economy and domestic social dimension. In addition, there are more opportunities available for financing international initiatives targeting climate change issues, and there are opportunities available for facilitating globally impactful sustainability development projects as well. It is fair that the more time is spent on a project, the more developed it becomes, but in terms of oil in Norway, it is not defensible to streamline the oil extraction and production process according to excessive innovation both in capacity and in making the extraction process fully dependable on renewable energy, which is reported as a decrease in national emissions. The tax rate of 1.65 NOK per litre of oil or Sm³ of gas is, at the very least, questionable from a global perspective, as is replacing decreases in emissions from some sectors with increasing emissions in others. The significant capital gains from oil are being invested in many great innovations. However, according to the ecocentric perspective, it is not reasonable to invent more wheels instead of using the ones we have and focus on further reductions or investments that may have a more direct impact on the climate. Nevertheless, there is a growing demand for energy sources with lower carbon footprints. As Norway transitions to less carbon-intensive sectors through its measures to reduce emissions from oil extraction, it may serve as a model for other countries in the same energy sector. For example, Norway's exploration of alternative energy sources, such as floating offshore wind farms, can be adapted to have implications for the global renewable energy market.

In conclusion, Norway's petroleum industry has contributed significantly to its economic growth, which is partly used to transition to less carbon-intensive sectors and reduce emissions to combat climate change. However, the transition is slow as the nation intends not only to continue extracting oil but actively expand it further. The report does not mention the total climate impact the exported oil will have globally, and the justification for expanding the industry is to reduce European dependency on coal. It does not align with the ecocentric perspective but with the anthropocentric perspective. Norway would need to help the nations currently depending on its oil to transition to renewable energy instead, potentially by selling them or helping them develop offshore wind turbines capable of fulfilling European energy needs and, in the longer term, global energy needs. Continuing on the track Norway is on puts the global climate at excessive risk as it prioritizes national economic gain above global climate change.

4.3. How do the nation's policy measures against climate change align with Ecocentric versus Anthropocentric theory?

4.3.1. Swedish Policy

The country's national climate policy framework sets ambitious goals, including achieving net-zero emissions by 2045 and reducing domestic transport emissions by 70 percent by 2030 compared to 2010. This policy framework includes a climate act, new targets, and a climate policy council. It guides comprehensive efforts across various energy, transport, industry, agriculture, forestry, and waste management sectors. However, policy incoherency makes historical data more challenging to communicate and obstructs measures performed on multiple levels of governance. The incoherent vertical, horizontal, and geographical policy is especially felt in international settings, as national policies clash and limit environmental agendas.

Internationally, Sweden actively participates in global climate initiatives and provides financial, technological, and capacity-building policy support to Brazil, South Africa, India, Indonesia, and China, to mention a few, in developing clean technology, waste management, and renewable energy. The fact that Sweden provides 1 percent of GNI to ODA and is a significant donor to multilateral climate funds such as the GCF and GEF, and what it does through Sida, is relevant here and in its collaborations. Through these collaborations, Sweden recognizes how the environmental problems cannot be solved within national borders but need to be as transboundary as the emissions, especially as the key players of Brazil, Russia, India, Indonesia, China, and South Africa (BRIICS), maintain and develop their industries. It also has a strict feminist foreign policy, recognizing equality as a prerequisite to future sustainability.

In the energy sector, Sweden has implemented energy efficiency regulations for buildings, capacity-building programs, and technology procurement networks to phase out oil-based and electric heating. Carbon and energy taxes incentivize energy conservation, and large enterprises must conduct energy audits every four years. In addition, a green credit guarantee program supports industrial investments that align with environmental and climate policy objectives.

Sweden's transport sector policies include GHG emission reduction obligations for petrol and diesel, fuel tax reforms, bonus systems for new, less carbon-intensive vehicles, and climate premiums for electric buses and heavy vehicles. Moreover, road transport and emission regulations require filling stations to supply at least one renewable fuel, while a CO₂-based vehicle tax system has been in place since 2006.

Agricultural and forestry policies in Sweden promote sustainability through, for example, the new Common Agricultural Policy (CAP) for 2023-2027, which allocates 40 percent of its budget to climate-relevant measures. In addition, the country's Rural Development Program and National Forest

Programme support sustainable practices and prioritize forest conservation. They entail no subsidies for production.

Waste management and circular economy efforts involve policies such as taxes and producer responsibility regulations to reduce waste emissions. Sweden's circular economy strategy relies on EU regulations, national and municipal waste plans, and various policy instruments.

It states that climate policy can be better integrated into the health, education, and social protection sectors, together with humanitarian support and disaster risk reduction.

4.3.2. Commenting on Sweden's policy measures

Sweden's policy measures against climate change reflect a commitment to prioritizing sustainability and addressing global implications. Reaching a reduction of 70 percent by 2045 is using existing knowledge in line with the precautionary principle, distribution, scale, and taking responsibility. The policy is presented and formulated as emphasising sustainability, environmental justice, and global ecological well-being. The country's policy approach intends to address global sustainability challenges and reduce its ecological footprint through its climate policy framework, cross-sectoral strategies, and active participation in international climate initiatives. In addition, it recognizes areas needing development, excluding the military, and it is unclear what else is excluded. This exclusion strengthens a bias in the report, stemming from the fact that the policies and measures reported in the report are all related to sustainability and do not provide a holistic view of the nation. It is thus focused on what is being done and not on what is not being done. While this can support and influence the global community to more vigorous action, it is not transparent and may result in corrupted data.

Furthermore, one of the largest concerns is the policy incoherence between nations, as it limits the attempts to formulate coherent action. First, it undermines trust, making cooperation more difficult at multiple levels within and between nations. This results in excess time being spent when time is of the essence. Yet, time is only one of the potential resources wasted due to inconsistent policies, as they may, for example, result in further emissions and lost partnerships. It furthermore can lead to some actors exploiting the incoherence to further their cause, and in lack of transparency, it is impossible to estimate the consequences of these actions. In recognizing this explicitly, Sweden is taking responsibility and appears willing to adapt to new types of more coherent policies.

Because of the policy incoherence at the international level, the alignment is closer to anthropocentrism than ecocentrism in that an anthropocentric agenda is prioritized above environmental action. This risk leads to the depletion of natural resources and justifying using non-renewable resources from differing political stances. However, it is clear that many ecological services are recognized and that an interdisciplinary approach is being taken.

4.3.3. Norwegian policy

Norway's policy measures include a cross-sectional, inclusive approach to policymaking involving civil society in decision-making processes. It has implemented policies and measures nationally and internationally to reduce greenhouse gas emissions and emphasizes the importance of promoting renewable energy and implementing measures to mitigate climate change. Its climate policy framework is based on the UNFCCC and is closely entwined with the Kyoto Protocol and the Paris Agreement. It aims to ensure environmental progress while minimizing economic and societal impact. Norwegian climate policy aims to achieve a 55 percent emission reduction by 2030, with a long-term goal of becoming a low-emission society by 2050. *"The policies are seen as long-term modifying trends in anthropogenic greenhouse gas emissions and removals"* (Norwegian Ministry of Climate and Environment, 2022a, p. 15).

"Climate change and emissions of Greenhouse gases have featured on the policy agenda in Norway since the late 1980s. Today, Norway has a comprehensive set of measures covering almost all emissions of Greenhouse gases as well as removals."

(Norwegian Ministry of Climate and Environment, 2022b, p. 16)

Through Norway's active international collaborations, it follows policies to provide substantial climate financing to developing nations, helping them transition to low-carbon and sustainable development pathways, such as Mozambique and Nepal, to incentivize commercial investment in clean energy development. It also contributes to ODA and multilateral climate funding through the Green Climate Fund (GCF) and Global Environment Facility (GEF). In addition, its policy supports renewable energy projects in other countries. To increase emission control, it participates in the EU Emissions Trading Scheme, which has led to more than 90 percent of emissions from the oil sector being subject to offshore Co2-tax.

Furthermore, Norway's policy initiatives are prominent in the energy and transport sectors, waste management, recycling, and support for renewable energy and biofuel turnover. For instance, in the energy sector, Norway has energy efficiency regulations for buildings and capacity-building programs promoting energy-efficient technology. In transport, the country has enacted GHG emission reduction obligations, fuel tax reforms, bonus-malus systems, and climate premiums for electric vehicles.

"Use of taxes or quotas on emissions, resulting in higher energy costs, reinforce [the emission reducing] trend. Norway introduced a CO2 tax as early as 1991. This tax has subsequently been supplemented by the participation of Norwegian installations in the EU's emissions trading system. About 85 per cent of all Greenhouse gas emissions in Norway are subject to economic instruments. The use of economic instruments has contributed to the significant decline in emission intensity."

(Norwegian Ministry of Climate and Environment, 2022a, pp. 11-12)

Norway also implements policies and initiatives to reduce emissions in the maritime sector, such as requiring zero and low-emission technologies for public ferries and supporting projects to achieve carbon neutrality in shipping. Furthermore, Norway implements policies and funding schemes to promote environmentally friendly farming practices, reduce emissions in the agriculture sector, and increase carbon sinks in the forestry sector.

4.3.4. Commenting on Norwegian policy

The way it is presented, the Norwegian climate policies seem to be quite effective in reducing both national and international GHG emissions and mitigating climate change impacts as emissions in many areas are reduced. However, the total emissions are still rising within the country. Therefore, it is crucial to continue monitoring and evaluating the policies to ensure how they are implemented, and if they are effective, equitable, and followed. By involving civil society in policy-making processes, it ensures intersectional perspectives capable of further consideration of social and environmental justice. Moreover, the integration of civil society, alongside the efforts of various ministries and institutions, reflects Norway's commitment to comprehensive and inclusive climate policies. In the aim to reduce GHG emissions while minimising the impact on the economy and social systems, it is anthropocentric as it prioritizes the impact on society and the economy before the environment. Furthermore, the policies rely on market-based instruments like taxes and emissions trading, which create economic incentives for individuals and companies to reduce emissions, in line with the reasoning of green economics, instrumentalism, and promoting growth.

However, the 55 percent emission reduction by 2030 could be argued to be in line with the precautionary principle, as it appears to strive for considerable change before climate change reaches tipping points of no return. This could also be considered in line with inherent value, the intent of long-term symbiosis between nature and humankind, recognition of ecological services, and maintaining natural capital. Thus, while still not representing the ecocentric perspective, it appears not to align fully with the anthropocentric perspective.

Then, while the NC highlights Norway's efforts to reduce emissions within sectors such as transportation and industry, the continued extraction and export of fossil fuels contribute to higher global emissions when considering the entire lifecycle of these resources, including their combustion and impact on climate change. Furthermore, while the focus is on policy regarding the nation's sustainable development policies, climate change mitigation efforts, and various environmental measures, it needs to be clarified what is left out of the report and what the excluded policy impact might be. While these initiatives primarily target reducing national emissions and promoting sustainable practices within the country, the potential indirect effects on global emissions must be considered within the broader context of Norway's energy and resource exports.

The following policy to consider is the intention to reduce oil extraction. As first presented, it is more in line with the ecocentric perspective as it recognizes the depletion of natural resources as detrimental. However, when those intents are read together with the estimated projections to increase pumping capacity over the next ten years, it changes that alignment. The planned reduction is not ecocentric as it is expected due to changes in the supply and demand of the international market. This implies that there is not any intent to change or transition other than to follow international economic developments.

Furthermore, it gets evident that they are planning to increase oil emissions or keep them steady, as less carbon-intensive processes would allow an expansion of the oil industry while still being capable of reporting increased efficiency and lower emissions per pumped ton of oil in alignment with the anthropocentric perspective as it does not take any of the ecocentric principals or concerns into consideration. The instrumental economic agenda is prioritized above environmental action. At the same time, Norwegian policy measures against climate change emphasise sustainability, environmental justice, and global ecological well-being, which could be interpreted as their awareness and active disregard for ecocentrism.

The next to consider is the Norwegian approach to emission reduction, which relies on cross-sectoral instruments, including carbon pricing through taxes and emissions trading. This way of thinking aligns with taking responsibility, as deep ecology promotes. It also reflects the importance of an interdisciplinary approach and adaptive management in line with ecological economics. Furthermore, it sounds good as this has led to technology improvements and emission-reducing measures like CO₂ storage projects and replacing gas turbines with electric ones. Nevertheless, those developments align with the anthropocentric perspective as it promotes economic growth and justifies using non-renewable resources.

The emphasis on carbon capture and storage technology, renewable energy projects, and measures to reduce emissions in various sectors reflects a focus on ecological sustainability and the preservation of natural systems. These actions could be argued to align with the principles of prioritizing the intrinsic value of nature and emphasizing the need for long-term environmental well-being. However, it is still through growth and technological development, not in symbiosis with nature, but by dominating it.

Other areas, for example, developing more efficient fishing procedures in Norway, can influence and promote sustainable practices in the international shipping industry. Furthermore, its efforts in developing more sustainable agricultural processes contribute to global sustainability by addressing land use and promoting sustainable agricultural and forestry practices. The research reflects symbiosis if it strives to understand better and incorporate natural processes more efficiently. Thus, the alignment of the research depends on more information regarding the details of technological development, if the fertilizers are natural or artificial, and if economic incentives are prioritized before what is good for the environment.

Additionally, Norway's engagement in international collaborations, provision of climate financing, and support for developing countries in reducing greenhouse gas emissions further highlight its commitment to global environmental justice and social well-being, but in an anthropocentric manner.

The policies demonstrate Norway's commitment to addressing global sustainability challenges, supporting sustainable development in other countries, and actively participating in international efforts to mitigate climate change. It is implementing measures beyond its borders, recognizing the interconnected nature of global sustainability and the need for collective action to achieve long-term environmental and social well-being. However, it remains in the anthropocentric growth-oriented perspective as it prioritizes the economic and social aspects before the environment.

4.4. How do the national approaches of Sweden and Norway combat climate change globally, and does their approach align with Ecocentrism or Anthropocentrism?

4.4.1. Sweden's Alignment

To start, Sweden displays several ecocentric principles and values. It offers considerable interdisciplinary financial support that significantly impacts the global fight against climate change. The large sum may also serve as inspiration for other countries through several international collaborations and frameworks, and their level of engagement can attract an increased level of international collaboration going forth. In addition, they have a long-term perspective striving to help developing countries depend on renewable energy and build alternative, more ecocentric societies compared to the development route more affluent countries have taken. Following this is the social dimension of international collaboration and initiatives, which displays considerable effort in equality, measurability, adaptive management, the precautionary principle, and inherent value. On a regional level, it is more in line with green ecology. However, globally it is considered well below the natural limitations of the planetary bounds, which is why their international social collaboration aligns with Ecocentrism. Their environmental efforts are also significant, especially regarding their research, as it contributes to global climate research. This research is being used to encourage and inform mitigation action and climate adaptation measures around the globe. It takes an interdisciplinary approach and further fosters collaboration. It also displays the precautionary principle as it strives to gain information to improve future decisions and measures. Thus Sweden aligns with Ecocentrism in these regards. However, when considering the main GHG/GNI generating sectors, it is evident that even these social collaborations depend on the economic structures focused on increased growth.

Furthermore, there is a communicative gap as the information provided could be presented more transparently. The military sector is not mentioned, and consumption-based emissions, international transport, and aviation are not included in their reported total emissions. Also, the policy incoherence

stemming from changes in sustainability procedures and the reporting framework over time results in intersectional emissions transfers, which affect the NCs' delivery of mitigatory actions. This indicates a sustainability bias in the reports, as it is unclear what is included and what is excluded. In addition, vital concepts, for example sustainability, are not explained or interpreted and need further definition as how it is understood significantly impacts the usage.

Swedish industry is steadily adapting and lowering emissions by using biofuels and electricity. However, it is still growing and is expected to continue to grow. The decrease and increase of industrial emissions depend on the economic conjuncture before environmental policy or impact, and as such, it is considered to be aligned with Anthropocentrism. The economic dependency is greatly affected by international competitiveness, and policy incoherence between national policies appears to hinder a faster transition.

Swedish agriculture is combatting climate change through research, reduced use of mineral fertilizer, and fewer animals. This reduces the emissions of the sector and contributes to a greater understanding of agriculture in line with adaptive management. However, it is increasing international transport and strengthening international food dependency. It also shows a disparity between national and international emissions, as the national emissions decrease while international rise. As such, it displays a more anthropocentric alignment.

Sweden shows ecocentric alignment regarding forestry as its forests are being replenished in volume. However, symbiosis and the precautionary principle are not reflected as biodiversity is limited to the timeframe between planting and harvesting the wood, as clear-cutting is still the standard process. Thus, it also shows anthropocentric alignment through green economy.

In conclusion, Sweden aligns with anthropocentrism as economic interests are prioritized above environmental action. It attempts to adapt in several ways, but not on a scale that can threaten its economy. It reflects the issue of policy incoherence between national agendas, and through its extensive focus on fostering international collaboration, it is combatting climate change.

4.4.2. Norway's Alignment

Norway displays several ecocentric principles and values in its international collaborations. It offers significant financial contributions and has a long-term aim to help developing countries build social structures relying on renewable energy capable of growth within natural limitations. It serves as an example for other nations to follow through its generous contributions, climate research, and presence in the international community may contribute to increased collaboration. Its NC focuses more on economic aid than working collaboratively through the social dimension. The NICFI initiative exemplifies their ecocentrism, contributing to reducing forest degradation in line with strong sustainability. Aiding developing countries in developing more environmentally friendly industries nationally is another example of their ecocentrism. However, it reflects a dependency on the

international policy framework as the examples are prone to anthropocentric policy incoherence. Their contribution to Brazil in 2015 is an example, as national policy in Brazil changed after the Norwegian contribution was retained.

The Norwegian NC shares the sustainability bias found in the Swedish. It is filled with sustainability action, but it is unclear what is left out, and the terminology used could be further defined to enhance transparency. One example is the military mentioned once as an exception to the policy relating to biofuel usage.

Its research into several costly CCS projects displays its commitment to combat climate change. However, these projects reflect anthropocentrism in several ways. First, the alignment is dependent on how these projects are funded. The technology is justifying continued oil extraction and selling to develop further, in line with weak sustainability. In addition, it is not striving for symbiosis with nature but rather to dominate it through technological development able to control atmospheric emission levels at will. Furthermore, technological developments display a significant effort within national borders regarding transport, renewable energy, fishing, international shipping, and oil extraction processes. Its policies rely on intersectionality and cross-sectional instruments like economic incentives and a carbon tax to combat climate change. Several of these technologies can be transferred to other nations and contribute even more significantly to combat climate change in the future.

However, Norwegian export heavily relies on oil and intends to increase capacity in the coming decade. The expected decrease in oil extraction after that is due to economic and political developments in the international setting, which are prioritized above environmental concerns. The oil is used to ensure 30 percent of European energy security, but as long as it is used as justification for continuing to rely on fossil fuels, it is anthropocentric. A more ecocentric approach would entail more effort to help the countries dependent on oil transition to renewable energies. This would be a more direct approach compared to the technology development in CCS. The indirect approach of developing new technology further indicates how economic interests are prioritized above environmental action.

In conclusion, Norway is making considerable efforts to combat climate change. However, it aligns with anthropocentrism as the economic gain is prioritized above environmental action. The ambitious target in Norwegian climate policy to reduce emissions by 55 percent by 2030 is being pursued at the expense of the global climate, as Norway streamlines its sustainability technology while funding it through its continued extraction of fossil fuels.

5. Summary, Contributions & Conclusions

This thesis has researched Sweden and Norway's national approaches to combatting global climate change.

The background for this thesis is based on the understanding that we live in the Anthropocene, where humankind recognizes that its growth has reached the stage where it affects our global ecosystem. Recognizing the detrimental effects our actions can have on our ecosystem, it highlights the need for change towards a future in line with the natural limitations of our world. However, the economic interests are so strong and intertwined in our societal structures that they distort this picture of change, making the word sustainable hard to understand and sustainable action questionable. Facing this challenge, this thesis investigates two National Communications (NCs), cases from two of the most historically involved countries in formulating the concept of sustainability, Sweden and Norway, using two very different understandings of sustainability. The first is called Anthropocentric, and the other is called Ecocentric. These concepts are based on a theoretical framework of Green Ecology versus Ecological Economics, Shallow Ecology versus Deep Ecology, and Weak Sustainability versus Strong Sustainability. An anthropocentric action was identified by its alignment with green ecology entailing, but not limited to, social, political, or economic agenda being prioritized above environmental action, Shallow ecology entailing exploitation or instrumentalism, or Weak sustainability entailing the promotion of economic growth, or justifying using non-renewable resources or prioritizing humans before nature. An ecocentric action was identified by its alignment with, but not limited to, the principles of ecological economics entailing scale, distribution, efficiency, the precautionary principle, recognition of ecological services, an interdisciplinary approach, and adaptive management, Deep ecology entailing inherent value of nature, the value of natural diversity, the symbiosis between humankind and our ecosystem, the responsibility of our actions with an environmental impact, the preservation of nature, and the spiritual understanding that humankind is part of our ecosystem, not just living in it, and finally Strong sustainability entailing the value of maintaining natural capital, and the conviction that depletion of natural resources is detrimental. As part of this thesis contribution, these two different perspectives have been depicted in two dynamic models. These two models are not representatives of the actual or objective reality but the result of the research and the researcher's understanding of the theory constructing them.

By operationalizing these theoretical contents, this thesis is taking a reflexive and systematic approach to shed light on the actions taken on national and international levels. It uses two cases, the Swedish and Norwegian NCs, to see if they align more with the anthropocentric or the ecocentric perspective.

To make this manageable, the thesis sets one main research question and three subquestions able to analyze three crucial areas involved, namely international collaboration, emissions with economic interests, and policies, to provide insights to answer the main question. In answering these research

questions, it has extracted data from the NCs and systematically analysed it in relation to the theory making up the two perspectives, Anthropocentric and Ecocentric, depicted in the two models. It then presented the data, which, in the researcher's opinion, was most relevant to the research questions. Through reflexivity and epistemological reasoning, it has been argued that both nations have a significant impact on global society through their collaborations, economic interests, emissions, and policies. However, the Ecocentric perspective is prioritized to a lower degree than the Anthropocentric perspective. The reason for this is because of how national economic interests continue to grow and how the ecocentric attempts from these nations are limited due to international policy incoherence. Thus, while clear aspirations in line with ecocentric principles are found in both NCs, they are dominated by anthropocentric values. With that said, this study recognizes that the two NCs are not representative of the nations but social constructs depicting a version of reality in line with social constructivism.

Through the documentary analysis, the researcher has gained a considerable understanding of the concept of sustainability, its limitations, and its potentials. It has provided insight into the history of sustainability in a global context and several of the frameworks used to promote sustainable agenda internationally and nationally. Furthermore, it has provided an understanding of the impact of various sectors from an economic, social, and economic standpoint. Finally, it has provided the researcher with a comprehensive understanding of how much or how little he knows of sustainability and what areas, instruments, frameworks, sectors, and tensions he should look into in future research.

5.1. The study's limitations

The study's first limitation is that the contents of the NCs entail a significant amount of initiatives, policies and measures described in a superficial manner and do not provide extensive insight regarding how and what these initiatives are doing. Understanding and studying all initiatives, measures, policies, institutions, countries, monetary trails, and the multi-level governance involved would provide a far more comprehensive and fair assessment. It would assess the alignment with anthropocentric or ecocentric implications more explicitly and provide more structure and strength to the findings of this study. As such, this study does not believe that the NCs are comprehensive enough to represent the two nations and need more data to communicate the contents more clearly.

It also shows how extensive the area of sustainability is, and while the initial stages of the study considered the history of sustainability to be better able to put the future findings in perspective, the understanding of the initiatives and research that is needed to comprehend the full contents of these NCs, and thus their full effect demand a considerable effort and vast experience, which is something to strive for.

The following limitation of this study is that it analyses two NCs while not triangulating or using mixed methods in addition to the documentary analysis. This would provide a more substantial methodology to increase the thesis's structure and reliability.

Another limitation stems from the researcher's wish to write a book about the research area, which sadly is outside this paper's scope. Thus the limited amount of pages making up this thesis has been forced to limit the amount of data available, resulting in some analyzed sectors and areas being given more and some less space.

5.2. Future research

Continuing this line of research by conducting interviews, focus groups, quantitative surveys, or experiments on isolated variables could prove valuable in questioning this research's findings, thus developing them further.

Conducting a documentary analysis of the framework for the IPCC reports is another due to the fact that the guidelines of the NCs have not been updated since 2013 and are still based on the findings of the IPCC report from 2006. As the rate at which new climate change insights can be incorporated into the NCs is critical and should be streamlined to provide the nations with up-to-date information and potential adaptation and mitigation actions, they could be better prepared and allocate resources more efficiently if the guidelines which the reports would have to refer to and be based upon, were updated and legislatively enforced.

From the understanding gained from analysing the NCs, both countries need to consider the limits of the economic dimension of sustainability and focus on innovation processes for strengthening the means of social sustainability as the next stepping stone towards balance with the environmental dimension. If the goal is to reach the SDGs, the Paris Agreement, and the development the IPCC and the UNFCCC explicitly strives towards globally, the understanding of human behaviour and motivation is part of the key to attaining them. It could provide a more sustainable and retainable way to approach the obstacles if the wanted change is understood and internalized more clearly by the global public, the governing instances, and other involved actors. As so, there is much to gain from looking into the science behind creating directed change. However, the theory is directed at organizational or personal change, not societal, and it would therefore be of interest to reflect upon which of these insights might be of interest when working on a global stage.

Furthermore, this thesis could be interpreted as an attempt to orient or provide insight into the need for the evolution of revolutionary change in both the Nordic countries and in a global context. The insights strive to benefit the reader in figuring out the how, what, where, and why of implementing change and inspire a mindset able to overcome the challenges set by societal structures.

The next consideration to look into is sustainability in the military sector to investigate whether it lies outside mitigation efforts and sustainable considerations or if it adapts while reporting is excluded due to national security reasons.

A future study considering a larger sample of data, potentially including the coming VNRs according to the framework of the Agenda 2030 to provide more insight into the various aspects of sustainability reflected in the 17 SDGs, is yet another area worth investigating.

Moreover, the monetary trail and its transparency and traceability is yet another topic of interest to research as it could have implications for other forms of contributions and international collaboration.

The net GHG removals in the LULUCF sector is another area of future research, as it would be reasonable to investigate the viability of having GHG removals.

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